MONEY

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THIRD EDITION

AUSTRALIA
ANGUS & ROBERTSON LIMITED
89 CASTLEREAGH STREET, SYDNEY
1936

Set up, printed and bound in Australia by Halstead Printing Company Ltd., Nickson Street, Sydney 1936

Registered at the General Post Office, Sydney, for transmission through the post as a book

Obtainable in London from the Australian Book Company, 37 Great Russell Street, W.C.1.

PREFACE

These chapters are intended to provide an introduction to monetary problems for students and readers generally who have not previously undertaken any serious study of the subject. In the main we have been content to describe and explain; only in the concluding chapter have we set out to criticize and advise on Australian policy. English or American books on money and banking are often misleading to Australian readers, inasmuch as the Australian monetary system possesses some distinctive features of its own. But to maintain some continuity with other literature on the subject, we have made the earlier chapters sufficiently general for the theory to apply to the monetary systems of most countries. Then, in the last two chapters we concentrate upon the problems of our own country. Consequently, while the earlier portion of the book consists largely of a restatement, in elementary terms, of modern monetary theory, the concluding portion assembles some material which has not before been presented in book form, and may be useful to readers outside Australia who desire to make themselves acquainted with the peculiar developments of the Australian monetary system. A list of books for further reading will be found at the end.

We take this opportunity of expressing our thanks to Messrs J. G. Crawford, H. D. Black and A. C. Davidson

r reading and advising upon the entire manuscript, ıd to Professor A. G. B. Fisher, Dr Roland Wilson ıd Mr D. T. Sawkins for assistance on particular points. But the authors alone are responsible for the statements of fact and opinion which appear in these pages.

March 1935.

R.C.M.
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TABLE OF CONTENTS

CHAPTER I

MONEY AND BANKING - - - - - - - - 1

1. What is money?
2. Different kinds of money.
3. The social functions of money.
4. The precious metals as money.
5. Standard coins and token coins.
6. Paper money and bank credit.
7. Central banks.
8. The business of banking.

CHAPTER II

BANK CREDIT - - - - - - - - - -

1. What is credit?
2. Why do people lend?
3. Why do people borrow?
4. Can banks create credit?
5. The reserve ratio.
6. Limits upon the power to create credit.
7. Forced savings.
8. Bank deposits as money.

CHAPTER III

PRICE LEVELS AND FOREIGN EXCHANGE - - - 53

1. Price levels and their movements.
2. Price levels and the purchasing power of money.
3. General price levels.
4. The measurement of changes in a particular price.
5. Price index-numbers.
6. Foreign exchange.
7. Instability of price levels and of foreign exchange.
8. Effects of instability of price levels.
9. Effects of instability of foreign exchange.

CHAPTER IV

WHAT DETERMINES CHANGES IN PRICE LEVELS? 80

1. Expenditure and production: the price level of consumers' goods.
2. Savings and investment.
3. Monetary policy and the price level of consumers' goods.
4. The Quantity Theory.
5. Supply of and demand for money.
6. Foreign exchange rates and tariffs.
7. Overseas borrowing and lending.
8. Other price levels and their dispersion.

CHAPTER V

WHAT DETERMINES EXCHANGE RATES? - - - 106

1. The problem of foreign exchange between two countries.
2. Why do foreign exchange transactions take place?
3. Supply of, and demand for, foreign exchange.
4. The purchasing power parity theory.
5. The problem of foreign exchange between several countries.
6. Monetary policy and stability of foreign exchange.

CHAPTER VI

THE PRE-WAR GOLD STANDARD - - - - - 128

1. The gold standard and foreign exchange.
2. The gold standard and price levels.
3. How the pre-war gold standard was maintained.
4. "Rules" of the gold standard.
5. Development of the gold standard in England.
6. The gold standard in other countries.

CHAPTER VII

MONEY AND ECONOMIC FLUCTUATIONS - - - 154

1. Fluctuations in employment.
2. Monetary policy as a depressive factor.
3. Monetary policy as an expansive factor.
4. Monetary policy as a self-reversing factor.
5. Monetary policy as a stabilizing factor.

CHAPTER VIII

TWENTY YEARS OF MONETARY INSTABILITY - - 183

1. War finance and inflation.
2. Post-war inflation.
3. The return to gold.
4. The British post-war gold standard.
5. France and U.S.A.
6. The abandonment of the post-war gold standard.
7. Competitive currency depreciation.

CHAPTER IX

THE AUSTRALIAN MONETARY SYSTEM - - - 222

1. Before Federation.
2. Commonwealth Treasury notes and the Commonwealth Bank.
3. Lessons of the sterling exchange.
4. Development of central banking.
5. Bank amalgamations.
6. Chief features of the Australian system.

CHAPTER X

AUSTRALIAN MONETARY POLICY FROM 1929 - - 268

1. Australia in the World Depression.
2. Falling London balances.
3. Expansion of central bank credit.
4. Monetary policy and recovery.
5. The future of the Australian exchange rate.
6. Socialization or public control of banking.

FURTHER READING - - - - - - - 311

LIST OF TABLES

No.		Page
1.	Percentage change in price	54
2.	Price-relatives	60
3.	Weighted price-relatives	65
4.	Australian price index-numbers	68
5.	Exchange rate	73
6.	Monetary gold of U.S.A.	200
7.	Monetary gold stocks	202
8.	Note issue and cash with the Commonwealth Bank	253
9.	Australian Treasury bills	282
10.	Trading banks' holdings of Treasury bills	285
11.	Trading banks' fixed deposit rates	289
12.	Overdraft rates and bond yield	290
13.	Exchange rates on foreign countries	298

LIST OF CHARTS

No.		Page
1.	A and B payments	160
2.	Australian note issue	254
3.	Banking statistics	287

CHAPTER I

MONEY AND BANKING

§ 1. *What is money?*

We live in a money economy. That is, few people work for wages in kind, and few make things for their own direct use. Most of us are engaged in producing goods, to sell for money, or in doing services in return for money. It is easy to take all this for granted, but as historians measure time, it is not so long since in many countries a great deal of economic life was managed without money. If you read the first chapter of Ashley's *Economic Organization of England,* you will meet with a stage of society in which custom rather than bargaining determined economic relationships, and where money was at best insignificant. The growth of the use of money hastened the break-up of the feudal manor, and into all communities steeped in custom, the development of a monetary system has introduced wide-sweeping changes. "The transition", says Ashley, "was of the utmost importance in the history of mankind." But here are we, with the transition to a money economy so long since accomplished, that it is difficult for most of us to imagine our economic life without money.

All of us except the youngest and perhaps the very poorest, habitually have some money about us. That is, we keep portion of our wealth or possessions in

this liquid form, which can be changed for anything else which money will buy.

Everybody keeps part of his resources, but *only* part in the form of money. This is done purely for the sake of convenience. So long as money remains in one's possession it is not being used, except to satisfy the desire for security and for freedom of choice as to what needs are to be satisfied in the future. In this, money may be contrasted with other goods, for clothes can be worn, food eaten, chairs sat upon, beds slept in, and books read. But it is convenient to keep part of our possessions in the form of money, even though, for the moment, this portion of our possessions cannot be directly used. Until we part with it in exchange for something else, money is a sort of *reserved* right to demand goods and services. There are several reasons why we reserve some of our right to demand goods. One reason is that certain goods are not desired immediately, because they will yield more satisfaction at a later date. Nobody would buy a week's bread at once, unless he believed that stale bread was good for him. Nobody would want to have to travel to and from his place of work six times all on the same day. Money is kept on hand to pay for goods and services not immediately required. Again, demand for goods may be kept in reserve because one has not decided which goods to buy. If you work each day at the same place, you might buy a weekly ticket; then you would keep less money by you throughout the week. But if your work takes you to various suburbs, in irregular order, you must reserve the right to buy a ticket each day, to wherever you wish to go, and you keep more money by you. If you "eat out" at various restaurants, you will keep more money by you than if you have your meals at a boarding-house,

and pay at the beginning of each week for that week's board.

A large part of our time is devoted to getting money and spending it, and the quantity which we will keep by us is likely to be larger, the greater is our income. Rich men usually have more money in their pockets than workers on the basic wage. But the proportion of his wealth which one keeps on hand as money, instead of turning it at once into the things money will buy, is dependent upon all sorts of other factors, usually summed up under the heading "spending habits". Some people spend most of their salary within a few days of receiving it, and have little money by them for the rest of the month, while others reserve for a longer period their right to demand goods, exercising it more gradually. This difference sometimes has its origin in character. Some people cannot resist the temptation to spend what they have, almost immediately, while others are more concerned with the future. But the difference may be due simply to a different arranging of quite similar scales of expenditure. Rent may be paid weekly, or monthly; shopping may be carried out on a cash basis, or accounts may be settled once a month; furniture may be bought on time payment, or for cash after the money has been saved; money may be kept on hand, or lent to someone for a couple of weeks or longer. Thus, of two people, receiving equal incomes and equally careful in their expenditure, one may keep on the average a far larger sum of money by him.

Consider also a shopkeeper. He too must keep part of his wealth in the form of money, where it does not yield him the profit he might get if he could put that money into extra stock. A cash grocer will need more till money throughout the month than a grocer whose

customers run accounts payable on the last day of the month.

The total quantity of money in a country is simply the total of the sums held by all the individuals and institutions in the country. Therefore the total quantity of money can be changed if individuals and institutions decide to keep a larger quantity of money by them. Another possible source of change lies in the fact that individuals keep a different holding of money at different times, and that fluctuations in their holdings may, or may not, be so timed as to compensate for each other. If the degree to which the fluctuations do compensate for each other changes, then the total holdings of all the community may be altered. Apart from this case, the quantity of money can only be changed by inducing individuals to hold more, or less money.

§ 2. *Different kinds of money.*

So far we have managed to avoid defining money. Everybody has a fair enough idea of what money is, to follow our remarks up to this point. But we cannot get very far in our study of money before various terms such as "cheques", "cash", "credit", "currency", and so on turn up, and some precision and consistency in their use is necessary. For years and years people have discussed whether "credit" is "money". It does not matter much, provided we know what we mean by our terms, and use the same word always to mean the same thing. In this book, we mean by "money" the most "liquid form of resources"; the things which can be most readily turned into other commodities. Actually the distinction is somewhat arbitrary, since the "liquidity" of a particular thing may vary from time to time. But for most purposes it is convenient

to draw a line round two things: *cash,* and bank *deposits,* and to regard them as money. Cash, that is, notes and coins, is slightly more liquid than deposits, because you can usually exchange a cheque for other goods only if the seller knows you, or has time to cash the cheque before he delivers the goods. Some writers prefer to regard cheques as "substitutes for money", meaning by "money" what we call "cash". Others use "money" to include both cash and deposits, and call these "common money" and "bank money" respectively. But the terms *cash* and *deposits* are easily understood by anybody who has had a coin in his hip pocket and a cheque book in his breast pocket —or who hopes to have one. It is convenient to keep the term money to cover both, because then we can speak of monetary policy, without specifying whether we mean the policy of the Government regarding the minting of coins, or of the Commonwealth Bank regarding the note issue, or of the Commonwealth Bank regarding the amount of Treasury bills it is prepared to discount. These things are all so intertwined that it is useful to gather them under the single term, monetary policy. If we wish to disentangle them on any occasion, we can easily find words by which to designate each one of them.

§ 3. *The social functions of money.*

We have been looking at money from the individual's point of view; to use an old phrase, money serves as a store of value. But this is true only from the individual's point of view. From the point of view of the community as a whole money is not a store of value, but it does yield two different services to the community. Money serves as a *means of payment* and as a *measure of relative values,* and these

are the social functions of money, as distinguished from its private function for an individual.

Consider, first, money as a means of payment. Clearly it can only serve in this way in as much as individual holders of money part with it, that is, exercise their reserved demand, or draw upon their store of value. Since money is usually held with a view to paying it away sooner or later, it can serve both the private function and this social function. If at any time holders of money decide to hold more of it, and increase their store of value, then less money is available for the social function of acting as a means of payment. In the complete absence of money, or if nobody were willing to part with his money, payments could only be made in kind. Most payments are concerned with exchange of goods and services, and exchange carried on without money is called barter. In barter, both parties to the transaction give some commodity and receive another for it, such as a sheep for a bag of wheat. One of the chief difficulties connected with barter is the "problem of double coincidence". You must find somebody who has and is ready to part with what you want, and who wants in exchange that which you have, and are ready to give away. This may not be easy. For example, Lieutenant Cameron, whilst a traveller in Africa, wished to obtain a boat. The owner of the boat wanted ivory. One Mohammed Ibn Salib had ivory, but wanted cloth. This did not help much, because Lieutenant Cameron had no cloth; but he did have some wire, and he managed to find one Mohammed Ibn Gharib who wanted wire, and had cloth. At last, then, the problem became easier. He exchanged the wire for the cloth with one man, the cloth for the ivory with another, and finally the ivory for the boat. Obviously trade

carried on under such conditions would be limited in scope. The use of money not only gets over this inconvenience of barter, but enables trade to be developed to a far greater degree. A man sells his wheat for money, and with this money he buys shoes from one man, meat from another, and so on. They in turn buy what they want with this money. The same thing is true of services; wages are paid not in kind, but in money which can be exchanged again for such goods and services as the wage earner wants and can afford. Money is the means of payment.

Another difficulty in barter is the measurement of the relative values of the goods which are to be exchanged. What a complicated price list would be required! A dozen eggs might be worth one rabbit, twenty rabbits (or twenty dozen eggs) worth a pair of shoes, a hat worth fifteen rabbits or three-quarters of a pair of shoes, and so on. Here again barter is not only inconvenient, but impracticable in widespread trade. But where goods are bought and sold with money, you need only express the relative values of the commodities in terms of money, and each will have only a single money price. Money is the measure of relative values.

These two social functions of money, although usually closely related, are nevertheless distinct. Almost any useful commodity may serve to measure relative values, but not all commodities are equally useful as a means of exchange. Cattle, for example, have often been used to measure value. In some primitive countries wives are still valued in terms of cattle. But obviously cattle are not very convenient as a means of exchange because of the unlikeness of the units, and because of the difficulties of subdivision. Again, about 1923, in Germany, while marks were

used as money for purposes of exchange, the measure of value was sometimes the American dollar or even commodities such as coal or oil. A contract would be made, for example, for delivery at a given date, say, six months ahead, of 1,000 lb. of wool. The value of wool would be calculated as e.g. $500, but payment would be made in marks equivalent to $500 at the time, not of sale, but of payment.

These social functions, and the private function of money, all derive ultimately from its suitability as a *medium of exchange*; it is a means of payment, a measure of relative values and a liquid form for resources only because it is "generally acceptable" in exchange for goods and services.

This "general acceptability" is regarded as an essential quality of money.

§ 4. *The precious metals as money.*

Among early forms of money, the precious metals naturally gained pre-eminence, because of their "preciousness". They were so highly esteemed as to be generally acceptable. You could always be sure that a man with corn for exchange would take silver or gold for it, because he could always find somebody to give him something in exchange for the precious metal. The origin of this high esteem for gold and silver is somewhat obscure, and is perhaps only partly explained by their rarity and beauty. But once established as a means of payment and a medium for exchange, they were naturally in still greater demand to serve as a store of value. In earlier times, payment was made by weight, and the first coins appear to have been simply ingots, stamped by the issuer as a guarantee of their weight and fineness. The English standard is still called the *pound*, and there is no

doubt that this is a descendant from the unit of a pound weight of silver. The French franc was once called the *livre,* which is still the French word for a pound weight, and the Italian *lira* has a similar origin. The English pound of silver was coined, as early as the eighth or ninth century, into 240 silver pennies, and the value of a penny in terms of goods was simply the value of a pennyweight of silver in terms of other things. At the time of William the Conqueror silver was far more valuable, compared with most other things, than it is to-day, and a silver penny would buy a bushel of wheat, or ten gallons of ale.

Gold was for long too valuable to serve as a medium of payment for any except very large sums, for a gold coin equal in value even to the silver penny of the Conqueror's reign would have been too small for convenience. Some countries, such as Travancore, have had, even in recent years, extremely small golden coins in circulation, but everybody who has handled them will realize their awkwardness. This would be particularly true of colder lands such as England, where even to-day the threepenny piece is liable to be refused by a bus conductor because his numbed fingers cannot easily pick up so small a coin!

§ 5. *Standard coins and token coins.*

On the other hand, baser metals, like copper and iron, although they have been used as means of payment, and coined, could have little future as money, as soon as they became so plentiful that, for a coin to buy much, it would need to be uncomfortably heavy to carry. Copper coins are in use to-day, but these are token coins. Here we must explain the distinction between *standard* coins and *token* coins. A standard coin is simply a certain weight of metal, coined, so

that if it were melted down, the metal would be worth as much, in terms of other things, as the coin was. The earlier coins were all standard coins, but now token coins are issued to serve as small change. The modern Australian penny is worth $^1/_{240}$ of a pound, because the Government has declared that 240 pennies are equal to a pound. Yet for a pound you could buy enough copper to make many more pennies than 240. In the same way, shillings and our other silver coins are only token coins, and are worth a twentieth part of a pound and so on, only because they can always be changed in practice into pounds at that fixed rate, upon application at the Commonwealth Bank. They do not contain silver to the equivalent value.

These token coins came into existence because the standard coins were of too high a value to be used in many small transactions. At first tradesmen issued their own tokens—sometimes of metal, sometimes of other materials, such as leather—and the State took over the business when the mixture of various tokens became inconvenient. Token coins are minted and circulated only at such times as banks find themselves short of a particular type of small change. If there are not enough sixpences about to meet the convenience of people, banks find that shopkeepers and others are always changing pound notes or two shilling pieces into the appropriate number of sixpences. If this goes on the banks will have no more sixpences in their tills, and the Mint will in practice sell new sixpences to the banks, in exchange for notes or standard money or a cheque. Since the Mint can buy the metal for the sixpences fairly cheaply, there is a profit to be made for the Government by the Mint's operations. If the Government, however, decided to exploit this, and made pennies and other coins in great quantities, there

would be no demand for them, unless they sold them at cheaper rates, say 250 pennies to the pound. And then the penny would no longer be $^1/_{240}$ of a pound. By minting token coins only when they are definitely demanded, at the ruling rate, the Government helps to keep their value, relatively to the standard coin, stable. The English Mint has occasionally taken back again unwanted silver coins, paying the same price as that at which it had sold them, i.e. 20/- equals £1. No doubt if the need did arise in Australia, the Mint here would adopt a similar policy. But with a growing population there is less likelihood of people ever having too much small change.

The standard English (and Australian) coin before 1914 was the sovereign, which was simply 123 grains of gold, of a standard fineness of $^{11}/_{12}$. That is, one-twelfth part consisted of an alloy, to harden the metal and to make it more durable. Sovereigns are no longer coined, and it may be truly said that although England returned to the gold standard in 1925, there has not been a standard coin in England since 1914. The sovereign has been replaced, for most purposes, by paper money.

§ 6. *Paper money and bank credit.*

Until recently, Australian paper money consisted of a promissory note, bearing the promise of the Commonwealth Bank to pay the bearer £1 (or whatever the value of the note might be) in gold coin on demand. Thus the note represented a right to standard coin to the value printed on the note. But on the most recent notes appears simply the statement that "This note is legal tender for one pound", and all it represents is the right to use it to settle legal obligations. To have continued to promise to pay in gold coin after

1929 would not have been consistent, since the Government had virtually forbidden the Bank to pay gold for notes. But notes have often borne upon their faces the promise to pay when in fact their issuers would not pay in gold. Notes which can be changed into gold on demand are said to be "convertible"; and notes which cannot be changed into gold are said to be "inconvertible". This question will be considered in more detail in later chapters. In fact, whether convertible or not, paper money serves the purpose of money quite effectively as long as people are confident that other people will accept it as a means of payment. They have, on some occasions, lost confidence in a paper money, but usually because its purchasing power over goods was falling rapidly, rather than because it was inconvertible.

The earliest forms of paper money, however, were generally acceptable only because they *were* convertible into a precious metal. The origin of paper money is wrapped up with the origin of banking, which dates to remote antiquity. For instance, eight centuries before Christ, Assyria had a well-developed system of bills of exchange, promissory notes and cheques, remarkably similar to our modern system. The Greeks and Romans, too, carried on most of the operations which we regard as typical of modern banking. In England, banking seems to have grown up out of the business of gold-smithing. In the seventeenth century the English currency consisted of silver coins—standard coins—of varying age and varying weight. People had often clipped a bit off each coin which passed through their hands, and so amassed quite a lot of silver in the course of a year. But the chief difficulty was a mass of coins, issued in the sixteenth century, which contained far less silver than a standard coin

should. Successive rulers had "debased" the currency by mixing an alloy with the silver. Then between 1630 and 1640 there was issued a considerable quantity of full-weight coins, supposed to circulate at the same value as the debased and light coins. This provided somebody with a chance of making a profit. By exchanging debased coins for full weight coins one could get silver, which when exported would sell for more than the debased coins one had parted with. This fact is sometimes referred to as Gresham's law, that "bad money drives out good". Naturally goldsmiths were quick to take advantage of this, and would even pay for the opportunity of sorting money, to pick out and exchange the heavier coins. There were already in existence agents or "scriveners" who acted as cashier and accountant to several merchants, and the goldsmiths induced these scriveners to lend whatever cash they might have by them overnight, and paid them 4d. per cent per day. Naturally the scriveners received back, not the same coins, but coins to the same nominal value, and the weightier coins would have gone into the goldsmith's coffers. Then it was to the advantage of the merchants to gain this 4d. per cent per day for themselves, and to leave their cash with the goldsmiths rather than with their scrivener. Here were the beginnings of bank deposits.

The next step was lending; at first to private individuals, then, in 1656, to Cromwell, and later to Charles II. This was profitable, and the goldsmiths then set out to obtain deposits from the public, making their profit from the difference between the rates at which they borrowed and lent. When one deposited money, one received a receipt, and gradually people developed the habit of making a payment by handing over a goldsmith's receipt. Here was the beginning

of paper money. At first the depositor would have to endorse the receipt, and make it payable to somebody else, but gradually the goldsmith bankers came to issue receipts with a blank space for the name of the person by whom the deposit would be withdrawn, and as they came to be widely circulated, the next step was to make these notes payable to bearer. Thus bank notes came to serve as money.

At the same time the goldsmith bankers had a different type of account, called "a running cash". No receipt was issued for the deposit, but the depositor could drop in and check his account in the goldsmith's ledger. When the depositor had to make a payment, he wrote a note to his goldsmith, and gave it to his creditor. The latter would then either collect the cash on presentation of the "draft", or hand the draft over to his own goldsmith, who would then collect the cash for him and place it to his account. Nowadays we write cheques in exactly the same way.

This banking side of the goldsmith's work became so profitable that it gradually became an independent business. The use of notes and drafts (or cheques) made it possible to develop the lending side a good deal further than if the bankers had lent actual coins every time. So long as only a portion of the notes outstanding was presented for payment each day, it was possible to lend in excess of the bankers' actual holding of coins. The notes were of course convertible, but if everybody had happened to try, on one and the same day, to cash all the notes held, the bankers would not have been able to meet their obligations. This is true, too, of modern convertible paper money. The issuing authority never holds a pound for pound backing for all its notes in circulation, and if everybody presented all the notes he held on the same day, the

notes would automatically become inconvertible. But so long as people accept them at their face value, the number who wish to get gold is, except in abnormal circumstances, small enough for the issuing bank to keep the notes convertible.

§ 7. *Central banks.*

The foundation of the Bank of England in 1694 laid the stone of a new structure, only completed in the twentieth century, in which the ordinary trading banks —the historical descendants of the goldsmith bankers —do not issue notes of their own, but do the best they can with notes issued by a central bank, which normally keeps out of the business of borrowing and lending for profit. There are still some countries where this development has not been accomplished, and where the currency consists principally of the notes of a few large trading banks. But the central bank is now so widespread a feature of the monetary system, that we may regard it as the typical note-issuing authority. In some countries the central bank is a Government bank; in others it is like the Bank of England, a private bank owned by stockholders. But in the former case, at least in theory, the directors of the central bank are usually relatively free from political control (cf. the Commonwealth Bank), and in either case the directors usually work in fairly close co-operation with the Treasury and the Government. The central bank normally has a monopoly of the note issue, and the other trading banks are encouraged, and in some countries required, to leave part of their cash holding as a deposit with the central bank. In times of crisis the central bank may lend to the trading banks, increasing the note issue if necessary. The chief

principle is that the note issue should be managed, not in the profit-making interest of private banks, but in the interests of the community as a whole—it being left to the directors of the central bank to decide in a large degree wherein the interests of the community consist, and what type of monetary policy will best further them. The main aim of the central bank has been different at different times in different countries; it may be the maintenance of the gold standard, or the provision of funds for a war, or the stabilization of prices. The pursuit of the central bank's policy in some countries is rendered easier by the general banking structure, which affects the extent to which the central bank can influence the credit policy of the trading banks. But this type of question will receive more detailed treatment later.

§ 8. *The business of banking.*

Our survey has covered standard coins, token coins, and paper money, and we have noticed the origin of the English cheque system. A few observations upon the activities of modern banks will complete this introductory chapter. "Banking" is a word which covers a large number of different operations, and the line between banks and some other financial institutions is not easily drawn. But this is an elementary book, and we may confine our attention to the two obvious types of banks, savings banks and trading banks, and consider their operations.

(*a*) *Savings Banks.*—Many people have savings which they do not wish to lend to a friend or business man, or to use in purchasing shares or Government bonds. They accordingly lend their savings instead to a savings bank, which will pay them some 2% or 3% per annum on their deposits. This is more

remunerative than hiding one's savings under the carpet, and it is safer. The savings bank "invests" money in its turn, e.g. by the purchase of Government bonds, and it is from the income it receives from these investments that the interest to depositors is paid. Not the whole of the money deposited is invested in this way; some must be kept as a reserve against the probable demands of depositors who wish to withdraw part or all of what they have lent to the bank. The proportion which this cash reserve bears to the deposit liabilities of the bank is often called the *reserve ratio.* If everybody wanted to withdraw his deposits at once, the cash reserve would be far too small for the depositors' demands to be satisfied. It was a "bank run" of this type which forced the Government Savings Bank of New South Wales to close its doors in 1931. A "bank run" is only likely to occur when people believe the bank is not "safe" and is not able to repay its depositors; and in fact *it is not,* if there be a serious run on it. On the other hand so long as depositors believe the bank can meet its obligations, *it can,* because withdrawals are not likely to exceed new deposits for long, and the bank's cash reserve is adequate for ordinary occasions.

The chief function of the savings bank from the community's viewpoint is that the small savings of individuals are lumped together, and made available for investment, to a degree which would not be possible if each individual had to use his own initiative in the matter. Moreover, a bank can set the ebb and flow of individual accounts against each other, so that the volume of money constantly available for investment is greater than it otherwise would be. Suppose, for example, that Mr Brown's account varies as follows: 1 Jan., £500; 8 Jan., £300; 15 Jan., £250; 22

Jan., £200; and Mr Green's as follows: 1 Jan., £100; 8 Jan., £200; 15 Jan., £300; 22 Jan., £350. Over the four weeks, Mr Brown could invest only £200, and Mr Green £100—total £300; but the bank has continuously available £500, minus what it keeps as a cash reserve. This advantage is more evident in the case of cheque accounts, which may vary from day to day. That, however, comes under our next heading.

The savings bank probably encourages some people to save more than they otherwise would, and this too tends to increase the quantity of money available for investment.

(*b*) *Trading Banks.*—The other type of bank is sometimes called a "commercial bank" or a "cheque-paying bank". But it competes to a certain extent with the savings banks in so far as it accepts deposits on which it pays interest. It is more likely to insist upon these interest-bearing deposits being made for a definite period, say three, six, or twelve months, whereas a savings bank, while it accepts such "time deposits" usually does its largest business with deposits withdrawable upon demand. Another distinction is that a trading bank often invests a smaller proportion of the money received on deposit in Government bonds, and lends more to business undertakings. But apart from these considerations, what we have said regarding savings banks applies to a trading bank's activities in so far as its interest-bearing deposits are concerned.

More distinctive are "current accounts", or cheque accounts. With rare exceptions these consist of deposits on which no interest is paid by the bank, while many banks make a small charge to customers with a current account. The chief reasons for having a current account rather than a time deposit are as follow:

(i) One's account is liable to fluctuate considerably from day to day, so that it could neither take the form of a time deposit, nor leave a large enough constant balance at a savings bank to earn interest. (The interest is calculated for each month on the lowest level of the deposit account.)

(ii) The use of cheques is convenient. This is the most important reason. With a current account one can write a cheque instructing the bank to pay bearer, or some specified person a given sum of money. By "crossing the cheque" with two parallel straight lines and some such words as "not negotiable", one can ensure that the cheque will not be cashed across the counter, but paid into somebody's account, and thus theft could be traced. Moreover cheques are convenient, enabling large sums to be paid by means of a single piece of paper, and are particularly suited to payment by post. Few business men in a British country would be without a cheque account, because of its convenience.

In one sense, cheques are substitutes for cash, and enable many payments to be settled by book entries. This is obvious enough when Mr Smith pays a cheque to Mr Jones, who banks at the same bank. Mr Jones pays the cheque into his current account; his account is credited, and Mr Smith's account is debited for the same amount, and no cash is used in the transaction. It is a little more complicated if Mr Jones has his current account at another bank, for then his bank must collect cash from Mr Smith's bank. But it is likely that other depositors at Mr Jones's bank have paid cheques to depositors at Mr Smith's bank, so that the banks owe each other something on the day's transactions. If the sums due to each from the other are equal, then their accounts are squared; no cash need

pass, and the whole set of payments has been settled by book entries. But if there is a difference one way or the other, it must be settled somehow. In earlier times, each bank sent out a clerk to visit other banks, taking with him the cheques received by his bank, drawn on other banks. He would collect cheques on his bank at the other banks, and pay over, or receive any cash due. These clerks grew tired of walking round London, and took to meeting in a certain coffee house, and settling everything on the spot. In this way developed what later came to be called "the clearing house", and now in all big cities the cheques are "cleared" once or twice a day, and statistics of the total clearings at Sydney, Melbourne, and other cities are published in the Press. At first the clearing settlements were made in cash, but where the banks have taken to keeping portion of their cash reserve in the form of a deposit at the central bank, the settlements are made by drawing cheques on the central bank in favour of the other trading banks to whom money is due. In this way even clearing settlements are made by book entries, without any transfer of actual cash. Of course the banks in whose favour the clearing cheques are drawn could easily cash them at the central bank if they wanted to, but usually they are content to leave them on deposit, since, a week or two later they may have to make similar clearing payments to other banks.

Deposits arise from the paying in of cash or a cheque. If the cheque is drawn on another bank this represents an addition of cash; if it be drawn on the the bank in question it involves either a decline in somebody else's deposit, or an increase in somebody's overdraft, but no change in the bank's cash holding. In the former case the reserve ratio of cash to deposits

rises, and in the latter case it falls. In the next chapter we shall consider the way in which these movements may influence the bank's willingness to lend. Here we need only note that a trading bank does lend out a considerable proportion of the money which comes to it as deposits. It purchases securities, especially Government bonds, and it makes direct advances or loans to business men. In this connection the bank performs an important function, in choosing from among the applicants for loans, those who shall be allowed to borrow. To protect its depositors' and shareholders' interests, the bank must lend only on safe ventures; and it is in a better position to judge such matters than most of its individual depositors would be. The best known form of advance in Australia is the overdraft, by which the borrower is simply given the right to draw cheques up to a certain sum, paying the bank interest on the sum drawn. Before granting an overdraft the bank usually requires the customer to deposit some "collateral" security, e.g. the deeds of a piece of land, or some industrial shares. Another type of advance is the discounting of bills of exchange. In Australia these are largely confined to bills arising from overseas trade, but in many countries bills of exchange associated with domestic trade are discounted by the banks. In essence a bill of exchange is a promise by a merchant, who has ordered certain goods, to pay a specified sum of money on a stated date. The seller of the goods, wanting money at once, virtually sells this promise to pay to the bank for a price which is less than the sum due, by the interest which the bank asks on that sum for the period which must elapse before the bill "matures" or falls due. It would come to much the same thing if the bank gave an overdraft to the buyer of the goods,

so that he might send a cheque along to the seller. As it is, when the bank discounts a bill, it usually credits the current account of the payee of the bill, just as it would if the buyer handed the seller a cheque on his overdraft, which the seller then paid into his current account.

We are not concerned in this book with the details of banking procedure, but with the significance of banking for the provision of money. It is clear that a current account is a liquid form for one's resources; and that cheques provide a widely acceptable means of payment. It is also clear that *if* the bank can, by making overdrafts and discounting bills, make available additional means of payment, in excess of the coin and notes in a country, then the bank has some control over the volume of money, just as the note-issuing central bank has. This is the problem to be faced in our next chapter. As early as the 'forties of last century, Fullarton was urging that "Bank notes are the small change of credit." There would appear to be little point in handing over the control of the note issue to a central bank, if this left the trading banks free to regulate the volume of means of payment by changing the volume of credit (or facilities to draw cheques in excess of their customers' savings) according to their own profit-making interests. Thus a more detailed study of bank credit is an essential prelude to any discussion of the monetary system.

CHAPTER II

BANK CREDIT

§ 1. *What is credit?*

Credit, as the Latin root of the word suggests, implies trust. When a shopkeeper sells goods on credit, he trusts his customer to pay for them at the end of the month, or on an agreed date. But it would come to much the same thing if the shopkeeper lent to the customer enough money to pay for the goods, on the understanding that the loan would be repaid by a certain date. To grant credit is equivalent to a loan of money; and when one speaks of Australia's credit in London, one really means the extent to which Australian Governments can borrow in London; or the extent to which English lenders are prepared to trust Australian Governments with their money. When Australian credit is low, this means either that nobody at all in England will invest in loans floated by the Australian Governments, or that people will only lend to them at a very high rate of interest. Similarly, an individual's "credit standing" is "good" if he can obtain loans from other people without difficulty.

It is often said that the basis of credit is confidence. A lender needs to be confident regarding both the integrity of the borrower, and his future ability to pay interest and subsequently to repay the loan. In other words, the lender must believe that the borrower

intends to meet his obligations with respect to the loan, and also that his economic position is, or will be, such as to make it possible for him to meet those obligations. These two factors are well illustrated by the changes in Australia's credit standing overseas during the world depression which began in 1929. Huge budget deficits led British investors to wonder whether Australian Governments would be in a position to make their interest payments regularly, so they would not lend them any more, except at a much higher rate of interest. Then, when some politicians and one State Government were unwilling, as they said, "to place the interests of overseas moneylenders before the interests of Australian wage-earners," and would not pay interest on the overseas debt, British investors became still less willing to lend to Australian Governments. Australia's credit was later "restored" by the gradual reduction of budget deficits, and the loss of office by those politicians who wished to "repudiate" the external debt.[1] In pointing out that Australia's credit declined and was restored, in this way, the economist does not pass judgment upon the *ethics* of repudiation: that lies outside his province.

But the willingness of the lender is only half the story. To extend credit to anybody, he must have resources at his disposal, in excess of those which he requires for his own use. For a private individual, these usually consist simply of savings out of his own income, which, instead of hiding under the carpet or spending on an automobile, he is prepared to lend to somebody in whom he has confidence. In the case of a shopkeeper, selling on credit is only possible because he himself can borrow money or buy his stocks

[1] For a detailed discussion of Australia's credit abroad, see Walker: *Australia in the World Depression*, esp. pp. 105-14.

on credit, or because he has sufficient money capital saved up to "finance" his customers' purchases. Thus the ultimate source of loans is the savings of individuals, and of groups of individuals who receive an income in common.

§ 2. *Why do people lend?*

The motives for lending one's savings may be varied. One may lend to a friend, to tide him over a temporary spell of unemployment or sickness. Again, one may lend to a bank because one's money seems safer there than anywhere else, or because this makes possible payments by cheques. In such cases the interest paid upon the loan has little importance. Although a friend may offer to pay interest upon what he borrows—"to save you from being out of pocket, old man"—it would usually be regarded as bad form to suggest that he do so, and thoroughly unfriendly to take advantage of his urgent need by asking a high rate of interest. Again, many people would deposit their savings or their "spare cash" at a bank if no interest were received, and might even be prepared to pay a small charge for its safe-keeping. But so far as savings are concerned, this would only be done by people who, through ignorance or suspicion, knew of no method of investing their savings which they could regard as safe, or who were quite impervious to the attractiveness of monetary gain. The greater part of such lending as is done has its origin in the belief that the interest paid will exceed the value that could be got from using one's savings in an alternative way. Where this is the motive, the question of interest always arises, and if the security seems the same in two cases, the savings will usually be lent to the borrower prepared to pay the higher rate of interest. Of course

different individuals often have different opinions regarding "the soundness of an investment", that is, the extent to which the borrower will be able and willing to pay interest in the future, and the extent to which one's loan may be subsequently repaid if one desires. And some people are more prepared than others to "take a chance", and lend on doubtful security if a high rate of interest is promised. Moreover the same individuals may be more suspicious of borrowers at some times than at others. But the fact remains that a rise in the rate of interest offered by borrowers will encourage people to lend more of their savings, and perhaps even to save more of their incomes for the purpose of lending, although the response of lenders to a given rise in the rate of interest may vary considerably from time to time. Quite apart from changes in their willingness to save and to lend, there may be changes in their ability to save, due to increases or decreases in their incomes.

§ 3. *Why do people borrow?*

On the other hand, the willingness of borrowers to borrow may vary, independently of their ability to borrow, i.e. their credit standing. Apart from individuals in financial difficulties, borrowing is usually undertaken because the borrower thinks he can use the loan to increase his income by more than the rate of interest he must pay upon it. The borrower may be a middleman, who is more in touch with other borrowers than are individual savers, and his profits, as in the case of the banks, depend upon the difference between the rate at which he borrows, and the rate at which he can re-lend. So we are brought back to borrowers who borrow in order to make money through the production of some goods or services.

Their demand for credit will depend upon several factors. They may need to borrow *working capital* to pay portion of their wages and other running costs —and their need for *working capital* is likely to vary both with the size of their output and with the general level of their costs. If their sales increase, they need to hire more workers, and, for the moment, they may need to borrow in order to pay the higher wages bill. If the wage-rate is raised, and if the employers can still hope to make a satisfactory profit by continuing to produce as much as before, they may again need to obtain additional credit. It need hardly be said that they will only seek further credit if they believe it will pay them to do so, that is, if they hope to increase their gross profits by more than the additional interest payments. Another purpose for which borrowers may borrow, is to purchase or pay for the construction of *"fixed capital"*, i.e. machinery, buildings and the like, to enable them to increase their output or to produce more cheaply, e.g. by using machines instead of labour. Here again they will borrow only if they hope to make *more* than the interest as a result of increasing their plant. At any particular time, each borrower may wish to borrow more either because the rate of of interest has fallen, or because fixed or working capital in general has become capable of earning bigger profits, e.g. because customers are buying more at ruling prices. Since the earning power of fixed capital varies a godo deal from time to time, a given fall in the rate of interest will not always produce the same increase in the amount of money borrowers are prepared to borrow. Nor will a rise in the interest rate always produce the same reduction in the demand for credit.[2]

[2] See Chapter IV.

Clearly, although credit (apart from a shopkeeper's credit to his customers) usually involves simply the lending and borrowing of money, this transfer of money represents a transfer of real resources. When one saves, one buys less (provided prices do not fall); and certain labour and other resources are no longer required to make the goods on which the saver proposes to economize. When a borrower borrows somebody else's savings, he is then able to hire the labour and resources which the saving "sets free" and to employ them in constructing capital equipment. What is lent and borrowed is money, but this money represents command over real resources (labour and raw materials). Naturally, the quantity of resources, command over which is transferred by a loan, depends not only upon the sum lent, but also upon the prices that have to be paid for goods and services.

§ 4. *Can banks create credit?*

The above discussion would apply perfectly well to a community that had no banks. Credit would exist, and be increased or decreased with movements in the rate of interest, and with changes in the willingness of lenders and of borrowers to offer and to accept credit. We have already seen (Chapter I § 8) that banks act as middlemen between lenders and borrowers; and by pooling small savings can make available a larger and less variable sum of money to borrowers than would be available if there were no banks. Moreover, by encouraging the confidence of small savers, the banks induce people to lend their savings, who otherwise would leave them hidden in secret places. Thus the operations of banks mean that a larger volume of loans is made available to industry and commerce. But over and above this, it is often claimed

that banks can "create" credit. Then, it is suggested, since they create credit out of nothing, the interest they receive on advances is all profit. And this often leads to a condemnation of the banks as exploiters, and to proposals for the socialization of banking. Bankers usually reply to this by explaining that they only lend out again money received on deposit, and in normal periods, not all of that. They can only lend more than this, they say, by lending out funds belonging to shareholders, such as reserves built up out of previous profits. The economist's function is neither to prove that bankers are scoundrels, nor to prove that they are the saviours of modern society. But he should be able to answer the plain question of fact: How far can banks create credit?

The best approach to this problem is through a consideration of the major items in a bank's balance-sheet. The account which follows is highly simplified, and assumes that all the bank's assets and liabilities are located within the country where the bank carries on business. Later we shall see how international transactions complicate the policy of bankers.

The chief assets of a bank in Australia consist of buildings, cash, deposits with the Commonwealth Bank, Government and possibly some municipal securities (including Treasury bills) and advances. Some of these assets do not bring in profits directly. For instance, suitable bank buildings are necessary for efficient administration, and very rich strong-looking buildings may encourage some credulous people to believe that their savings will be quite safe if deposited in so fine a bank. But unless the bank lets some of its rooms to business men, this asset yields no direct revenue. Neither does cash nor deposits with the Commonwealth Bank. The only reason for keeping

any of its assets in this form is that the bank must make payments from day to day across the counter and to other banks in respect of cheques. In practice a bank keeps considerably more of its assets in the form of cash and deposits with the Commonwealth Bank, than is required for ordinary day to day payments. It is thought advisable to have a margin for safety, in case a large number of people want to draw money out on the same day. The bank's cash and deposits with the Commonwealth Bank are called its *cash reserve;* but this should not be confused with the "reserves" which a bank may build up out of profits due to shareholders. The latter, as we shall see, are not an asset, but a liability. In passing we may notice that as a safety margin, the deposits with the Commonwealth Bank are as good as cash on the premises of the bank, since they can be drawn out immediately in case of need. Next we come to profit-earning assets. These include *securities* such as Government bonds and Treasury bills, which bear interest at regular intervals. If necessary, bonds can be sold for cash on the stock exchange, but if a bank tried to sell a large quantity quickly, the price of bonds would probably fall. Treasury bills, which are relatively a new thing in Australian finance, will be explained in detail in Chapter X. Here we note merely that they can be "re-discounted" or sold for cash to the Commonwealth Bank. The last type of asset is also a profit-earning one, namely *advances* to customers—such as farmers, merchants and other business men. In Australia these advances are usually made in the form of *overdrafts*; that means the customer is allowed to draw cheques up to a given limit, in excess of his own deposits. The only way for the bank to turn this type of asset into cash is to get the customer to repay portion or

the whole of his overdraft; and in difficult times, such as the depression which began in 1929, many a business man finds it very difficult to do this. For the business man, too, often has some assets which he cannot quickly turn into cash, such as machinery and buildings; and other assets, such as stocks of finished or partly-finished goods which he can sell only at a loss if he throws them all on to the market at once.

Assets can be ranked according to their profitability, or according to their liquidity. The most profitable assets are usually overdrafts, then Government and other bonds, and then Treasury bills. But alternatively the least liquid assets are usually overdrafts, then bonds and then Treasury bills. The last may be regarded as a second line of reserve, after the first line of reserve, which is cash and deposits with the Commonwealth Bank.

At this stage it would be well to notice that the problem of liquidity of assets is somewhat different for the banking system as a whole, and for an individual bank. If all the banks endeavour to convert some of their advances or securities into cash this involves either an increase in the total quantity of cash in the country, or a decrease in the public's cash holdings. For the total cash in circulation at any time is divided between the banks and the public, and if the total quantity is fixed, either group can increase its holdings only at the expense of the others. The absolute level of the cash reserves of all the banks taken together cannot always be varied merely by the banks selling securities, for the buyers of the securities are likely to pay for them with a cheque on their deposits. This reduces the bank's liabilities and raises the *reserve ratio,* but the bank's aggregate cash holdings do not change. They are most likely to

change (i) if there is a depression, so that people carry less cash about with them; (ii) if the cheque habit grows, so that people deposit more of their cash with a view to making payments by cheque; and (iii) if the total quantity of cash in the country increases.

But any single bank may turn securities into cash if the other banks are prepared to hold less cash. In this case the public's demand for cash may not come into the problem at all.

Let us now turn to the other side of the balance-sheet. Just as the bank's assets vary in liquidity and profitability, so its liabilities vary in the extent to which they may be required to be met at short notice, and also in the extent to which they incur costs or charges upon the gross profits made on advances, etc. One liability is *shareholders' funds*, consisting of paid-up capital (belonging to the people who hold bank shares), the reserve fund, and undistributed profits. The latter include profits which are held in reserve against bad times, and profits awaiting distribution at the half-year when the dividend is usually declared. This type of liability is indefinitely postponable; since if the shareholder wants his money back, he sells his shares to somebody else, who then becomes a shareholder. If nobody would buy the shares, he might never get his money back. The reserve fund (not to be confused with the cash reserve) may be distributed later in the form of profits, or it may not. This is decided by the bank's Board of Directors. The other important type of liability is *deposits*. Just as shareholders' funds are *owed* to the shareholders, deposits are *owed* to depositors. Sometimes the figures of a bank's deposits are quoted to show how solid its financial position is, but of that they can tell us nothing. A business man's financial position does not depend

upon the size of his *debts*; and the bank's deposits are its debts to its depositors. Some deposits are payable on demand, and on these usually no interest is paid. But interest is paid on "fixed deposits", which can only be withdrawn on a stated date. Thus, just as the more liquid assets are in general the less profitable, so the less postponable deposit liabilities are the less costly to the banks.

§ 5. *The reserve ratio.*

The assets of a bank and its liabilities are, at any given time, equal. A bank's assets *in Australia* are usually less than its liabilities *in Australia,* but this difference must be balanced by its assets outside Australia. This complication will engage our attention later. Let us, for the purpose of illustration, assume that there is *only one* bank, and that it has the following balance-sheet on a given date.

Liabilities.	£	Assets.	£
Shareholders' funds ..	10 m.	Cash, etc.	10 m.
Deposits	70 m.	Advances, Securities, etc. } ..	70 m.
Total	80 m.	Total	80 m.

We are simplifying the matter by ignoring many minor items, including the value of the bank's buildings. In this case the proportion of loans (advances, securities, etc.) to deposits is 100%, and the cash reserve represents one-seventh of the deposits. It is convenient to call this fraction the *reserve ratio.* (For this simplified treatment we need not worry about the proportions of the cash reserve which consist of currency, and of deposits with the central bank; the latter are equivalent to notes, since they can be drawn upon in case of emergency.) In our example,

the reserve ratio is $^1/_7$. In deciding how large a reserve ratio to keep, the bank will consider both the extent to which fluctuations are likely to occur in customers' deposits and withdrawals (or demands for cash) in normal times, and the outlook for the general business situation. If customers draw out a lot one day, and little on another day (e.g. because pay-day falls on Friday for many factories) the week's withdrawals might run somewhat as follows:

Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Average.
1,000	1,000	1,500	1,500	3,500	500	1,500

If wage earners spend most of their income early in the week, the new deposits of shopkeepers might run as follows:

Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Average.
3,000	2,000	1,000	500	500	2,000	1,500

Thus, although on the average for the week, new deposits are equal to withdrawals, on Friday deposits are 3,000 less than withdrawals, and the bank must have enough cash on hand to meet the latter. That is, it cannot lend out the excess of deposits over withdrawals on Saturday, Monday, and Tuesday, because if it did, its till money would be too low for the payments on the other days. But if on each day, new deposits equalled withdrawals, the bank would not need to keep as much cash in its till. Apart from these regular fluctuations the bank may try to increase its cash reserve ratio when the business situation threatens heavy withdrawals and few new deposits. It is only to be expected that the reserve ratio should vary somewhat from time to time and from country to country. But in any particular country, convention may lead banks to keep the reserve ratio as constant as possible, as used to be the practice in Great Britain until recently; and in the United States a minimum

reserve ratio is fixed by law. In Australia the reserve ratio usually varies from year to year, falling when the banks have plenty of assets overseas, and rising when overseas assets decline.

Australian banks often refer to the movement of another rate, namely the ratio of advances to deposits; and similar references will be found occasionally in the reports of English banks. Nevertheless, most English studies of banking consider only the reserve ratio, and in this chapter we shall follow this practice. But when, in Chapter IX, we deal with the peculiarities of the Australian monetary system, we shall have more to say about the ratio of advances to deposits, and the variability of the reserve ratio.

Suppose that the reserve ratio is to be kept constant. How can an expansion of credit take place? Let us assume that somehow or other, deposits and cash rise by the sum of £10 million. This might be because gold has been imported, or because the public's cash holding has fallen, or because of some other factor. Whatever the cause, let us consider its effects.

Liabilities.	£	Assets.	£
Shareholders' funds..	10 m.	Cash, etc.	20 m.
Deposits	80 m.	Advances, etc.	70 m.
Total	90 m.	Total	90 m.

The cash reserve has risen to $^1/_4$, and the proportion of advances to deposits has fallen to 87·5%. The bank can obviously lend out $^6/_7$ of the new cash, to restore the old reserve ratio:

Liabilities.	£	Assets.	£
Shareholders' funds..	10 m.	Cash, etc.	11·4 m.
Deposits	80 m.	Advances, etc. ..	78·6 m.
Total	90 m.	Total	90 m.

The reserve ratio is now about $^1/_7$, and the proportion of advances to deposits is little less than 100%.

But people who receive the loans spend this money, on goods or workmen's wages, and sooner or later it may find its way into the pockets of other people who will deposit it at the bank. In fact this is certain to happen, unless, owing to the growth of business activity, or higher prices, people generally keep more money in their pockets. To this we shall return presently; but assuming that the whole of the loan comes to swell the deposits of other people at the bank, we have the following position:

Liabilities.	£	Assets.	£
Shareholders' funds	10 m.	Cash, etc.	20 m.
Deposits	88·6 m.	Advances, etc. ..	78·6 m.
Total	98·6 m.	Total	98·6 m.

Again the reserve ratio has risen and the proportion of advances to deposits has fallen, so the bank can again increase its advances by $^6/_7$ of the new cash, i.e. by $^6/_7$ of 8·6 million or by 7·4 million. This would restore the old cash ratio of $^1/_7$ and would again bring advances up nearly to the level of deposits. But again as the money comes round to other customers, they will increase their deposits, and the reserve ratio; and again a further expansion of advances would be possible—this time of $^6/_7$ of 7·4 million. Thus the cycle would continue, with an ever diminishing addition to the bank's advances: 6·4, 5·5, 4·7, 4·0, 3·4, 2·9, and so on down to zero. The sum of all these additions to the bank's advances would be equal to six times the deposit which started the whole process; and the bank's balance-sheet would be as follows:

Liabilities.	£	Assets.	£
Shareholders' funds..	10 m.	Cash, etc.	20 m.
Deposits	140 m.	Advances, etc.	130 m.
Total	150 m.	Total	150 m.

Thus the bank does seem to have "created" credit. But all this rests on the assumption, which may not be valid in practice, that people do not keep any more money in their pockets than before the credit expansion. The expansion of credit means that people have more money to spend. This is certain to lead either to an increase in business activity or to higher prices, and most likely to both. The usual effect of either is that many people need to keep by them a slightly larger quantity of cash. This means that not the whole of the money lent out will find its way back to the bank as deposits, and its cash will fall. Consequently the expansion of credit will be limited at each turn of the cycle explained in the preceding section. Just how far the expansion of credit would be checked cannot be stated in the form of a general rule, because the relationship between credit, prices, business activity and the public's demand for cash to hold is a very complicated one.

The same mechanism can be seen at work in the opposite direction if something happens to reduce the bank's reserve ratio. This may arise if people, deciding to keep a little less of their wealth in the form of bank deposits and more in cash in their own pockets, withdraw some of their deposits. It may also arise in several other ways, as we shall see when we come to consider the Australian monetary system. At this stage, however, we may ignore the reason why deposits and cash fall, and consider merely the effects. Suppose

they both fall by £5 million, which in relation to our other figures, is quite a large sum.

Then, starting from our latest balance-sheet, we have the following:

Liabilities.	£	Assets.	£
Shareholders' funds..	10 m.	Cash	15 m.
Deposits	135 m.	Advances, etc.	130 m.
Total	145 m.	Total	145 m.

That is, the reserve ratio has fallen to $^1/_9$, which is well below the customary level. To increase its cash reserve ratio, the bank must either reduce deposits, or turn its other assets, e.g. advances or securities, into cash. Suppose the bank reduces its loans by £4 million in the hope of bringing its cash up to £19 million or about $^1/_7$ of the present level of deposits. In order to repay their overdrafts, business men must either sell stocks of their goods, or sell other assets, e.g. Government bonds, or draw on their bank deposits if they have any. In the last case, the bank's deposits decline, and its cash holding does not increase. If, on the other hand, the bank's customers sell their securities, or sell off stocks of goods, the men who buy them will almost certainly pay a cheque drawn on *their* deposits. So, in either case, instead of cash increasing by the reduction of advances, deposits fall by this amount. The same result follows if the bank sells securities. The bank cannot convert its assets into cash (remember, we assume there is only one bank) unless the public's cash holdings are reduced; and this is likely to happen, over a short period, only when prices fall or business activity declines. In so far as the reduction of bank advances does provoke a decline in business, it may lead to a decline in the public's demand for cash, and so to an increase in the

bank's cash. But unless business declines or prices fall, our balance-sheet becomes as follows:

Liabilities.	£	Assets.	£
Shareholders' funds..	10 m.	Cash	15 m.
Deposits	131 m.	Advances, etc.	126 m.
Total	141 m.	Total	141 m.

The reserve ratio has risen to little above $^1/_9$, and the ratio of advances to deposits has also risen, though but slightly. Further reductions in advances will cause similar reductions in deposits; but unless the public wants to hold less cash, the bank's cash remains constant. As deposits fall, the old reserve ratio of $^1/_7$ will be approached, and the ratio of advances to deposits will gradually rise. If the public continues to hold the same quantity of cash as advances fall, the decline in advances and deposits must continue until deposits fall to £105 million, when the reserve ratio will again be $^1/_7$. But just as the expansion of advances usually means brighter business and higher prices, with a larger demand for cash on the part of the public, so the decline of advances means depressed business and falling prices, leading to smaller cash holdings on the part of the public. Accordingly, deposits would not fall back to £105 million; for the rise in the bank's cash holdings restores the old reserve ratio of $^1/_7$ before this low level of deposits is reached.

The reader will notice that if deposits were equal to advances the ratio of advances would remain constant at 100%, whether advances rose or fell, until such time as the movement caused a change in the bank's cash holdings. And if deposits were less than advances an expansion of advances would increase the ratio of advances to deposits and a contraction

of advances diminish it, unless there were also changes in the bank's cash holdings. This observation has an important bearing upon Australian policy during the depression, as we shall see in a later chapter.

§ 6. *Limits upon the power to create credit.*

If business conditions and the public's demand for cash respond quickly to the movement of bank advances, the expansion of credit which follows an increase in the bank's cash (or the credit contraction which follows a decrease in cash), will be gradually checked, and will finish with advances and deposits above (or in the converse case below) their original level, but advances will have changed, in our example, by less than six times the change in the bank's cash holdings. Just how large in fact the change in advances will be, depends upon how far people can carry on higher prices and brisker business without using much more cash in their payments.

The importance of this factor may be observed each Christmas. The increased volume of cash purchases associated with this season involves the holding of more till money by shops and, in many cases, more pocket money by individuals. When the Australian note issue was kept fairly constant throughout the year, the banks' holdings were diminished each Christmas by a couple of million pounds, and the public's holdings increased similarly. Since this reduction in the banks' cash was known to be but temporary, it did not lead to a reduction of advances. But if such a movement of cash out of the banks into general circulation among the public continued, the banks would restrict credit.

A boom usually involves some cash drain of this kind, as more people are employed, some on higher

wages, than during a slump. But the more people use cheques, the less their holding of actual cash is likely to fluctuate with their income. Again, if industry consists of a lot of independent concerns, more cash may be needed than if processes are integrated by huge concerns like those controlled by Henry Ford. But the chief factors causing variations in the public's cash holdings are the size of the wages bill of the nation, and the aggregate of incomes of other people who do not use cheques much.

Our discussion has shown that, so long as the bank wants to keep its reserve ratio constant, it cannot itself initiate an expansion of credit. But if the cash reserve of the bank increases, and willing borrowers can be found, an expansion of credit will follow, which will be something less than six times the increase in the bank's cash holdings if the reserve ratio is kept at $^1/_7$. (If the reserve ratio be $^1/_4$, then the credit expansion will be less than three times the increase in the cash reserve; and so on.) With the total quantity of cash (inside and outside of the bank) fixed, the bank can only alter its own cash holdings, by producing, through credit expansion or contraction, an expansion or contraction in business, and an appropriate increase or decrease in the public's cash holdings.

What we have said is equally true, with little modification, when there are a large number of banks. One bank may increase its cash holdings at the expense of other banks; for instance, if it sells securities to people who pay for them with cheques on other banks. But the banking system as a whole can expand credit, and control its cash holdings, only in the way we have explained above.

It has usually been taught that an increase in the banks' cash holdings comes about as the result of

savings by depositors. But a little thought will show, that if money incomes remain constant, together with the other factors affecting the public's cash holding, saving by depositors will not always lead to an increased cash reserve ratio for the banks.

This is more obviously the case if the savers economize on things for which they used to pay by cheque. They draw less cheques, and their deposits are on the average larger. Meanwhile the people to whom they would have paid the cheques have smaller deposits than they would have had, so that the total deposits of the banks remain constant. No more and no less cash is in circulation, so that the banks' cash is constant, and the reserve ratio of cash to deposits has not changed. In this case the savings deposited at the banks will not lead to any increase in bank advances, since the transaction does not produce any change in the reserve ratio.

If the saving is made by reducing expenditure on things previously paid for in cash, the individuals who do the saving may deposit with the banks cash to the amount in question. But it does not follow that the banks' cash will be increased by this amount. For shopkeepers will be receiving less in cash payments from the savers, and both their sales receipts and their cash on hand will be reduced. If they do not consider the reduced till money sufficient to provide change for the new volume of sales, they will withdraw cash from their banks, thereby offsetting, to a greater or less degree, the additions made to the banks' cash by the savers. Consequently, the effect upon the banks' cash reserve of additions to savings of this kind cannot be determined accurately. There might conceivably be no increase in the banks' cash, as in the case where the saving is made by reducing expenditure

previously paid for by cheques. Or there might be an increase sufficient to raise the reserve ratio and to promote an expansion of credit. In the latter case the growth in deposits may even exceed the new savings of the banks' depositors. We may conclude therefore that the movement of bank deposits—even of savings bank deposits—is by no means an accurate guide to the movement of voluntary savings by the public.

From this discussion it also follows that an increase in savings deposited with the banks does not necessarily lead to an equal increase in bank advances. It may lead to no increase in advances at all, or it may lead to a larger or a smaller increase than the increment of savings.

And if the total quantity of cash in the country changes, it is even more probable that bank advances will move independently of "savings entrusted to the banks", because deposits, too, may then move independently of the latter.

Suppose, for instance, that to carry on a war, or because tax revenue is insufficient to meet Government expenditure, the central bank gives an overdraft to the Government for £10 million. The Government draws cheques for this sum and pays them to its employees, to contractors and others. When they pay the cheques into their accounts with the trading banks, the latter can then obtain cash for the cheques from the central bank, or they can simply allow their deposits with the central bank to increase. In either case, the banks' cash holdings have increased and there is no decline in the public's holdings. The banks will accordingly expand advances until their reserve ratio is again $^1/_7$ (to adhere to our example). If the central bank goes on lending more and more to the Govern-

ment, the process of credit expansion continues concurrently. The total increase in bank loans will be several times the original loans to the Government, the limiting factors being the banks' reserve ratio, and the growth of the public's cash holdings, as we saw above. In truth, the total quantity of cash is increasing, and this is the real source of the expansion of credit. If the central bank's powers to issue notes are limited, then it cannot go on lending indefinitely to the Government; for its loans lead to a credit expansion, higher prices and busier industry, and an increasing demand for cash on the part of the public.

To sum up, so long as banks keep a constant reserve ratio, they can and do expand loans and deposits in excess of any accession of cash, however received. But unless the public begin keeping larger deposits —because it is convenient to carry less cash about— or unless the total quantity of cash in circulation is increased, the banks can only expand credit by reducing their reserve ratio. In short, when some people assert that the banks should "release credit", their claim means either that the currency issuing authority should increase the total quantity of cash, or that the banks should be content with a smaller reserve ratio. Even with a rather smaller reserve ratio, the banks could only increase their advances by a certain amount, a limitation being imposed by the consequent increase in the public's demand for cash.

§ 7. *Forced savings.*

This analysis involves the revision of some popular notions about savings, and the extent to which the bank's power to lend depends upon the savings of its

depositors. The commonsense meaning of "saving" is to refrain from spending part of one's income; "savings" are measured by the excess of income over expenditure, in the period of time under consideration. When an individual saves, he forgoes temporarily the right to demand goods and services, and, as we have seen, the loan of his savings transfers temporarily this right to the borrower. But we have argued that an increase in savings does not necessarily raise the banks' cash reserve ratio, and in this case there is no corresponding increase in bank advances. Thus the savings may be, from the community's point of view, lost.

But if through action by the central bank, the cash reserve ratio of the trading banks is raised, bank advances may increase without there being any corresponding increase in the "savings of the people". This means that, although the banks' depositors have not forgone a greater part of their right to demand goods and services, the banks' borrowers do receive an increased right to demand goods and services. How can one section of the community obtain an increased command over resources if everybody else's nominal command over resources is constant? There are three possibilities. The first is the existence of unemployed resources, and the expansion of bank loans enables the borrowers to hire or purchase this idle labour, equipment or material. The second possibility is an increase in production. If, in the past, more efficient methods have been adopted, and preparations made to increase the supply of goods offered for sale, they may come on to the market just as the new money is made available by the expansion of bank loans. The third possibility is for the recipients of the bank loans to bid goods or resources away from other people who have

no extra money to spend. They may offer higher wages for labour and higher prices for goods. People on fixed incomes cannot buy as much if prices rise, and some employers will not be able to hire as much labour if wages rise; these goods and this labour become available therefore for those who have the spending of the new money, put into circulation by the expansion of bank loans. The rise in prices forces people on fixed incomes to consume less, and the banks' borrowers receive command over these *forced savings*.

The expansion of bank loans in excess of depositors' savings does not always involve forced saving; but only when resources are fairly fully employed, and when the fruits of previous technical progress are not large enough to satisfy the increased demand "financed" by the excess of loans over depositors' savings.

§ 8. *Bank deposits as money.*

This is a convenient place to consider a point regarding which there is much popular confusion. Bank credit is part of the monetary system; but which is to be considered as money, bank deposits or bank advances? When a bank increases its advances in excess of the savings of its depositors it adds to the borrowers' command over resources and increases the quantity of money in circulation. Therefore some people would regard bank credit as measured by the figures of advances. But bank deposits are a means of payment, and must be considered as money. And as we have emphasized, an increase in advances normally leads to an increase in deposits; the advances are an instrument by which deposits are increased or decreased. Once the loan has been made, the figure of advances represents the borrowers' indebtedness to

the bank; the deposits which the advance has generated continue to pass from one person to another and to serve as money until either the advance is repaid, and somebody's deposits accordingly reduced, or depositors withdraw their deposits and increase their cash holdings. In the former case credit is contracted by the repayment of a loan; in the latter case its contraction follows an attempt to substitute cash for deposits as a means of payment. Of course, so long as banks relend to other borrowers to make up for advances which have been repaid, total advances and deposits remain constant; and if, when some depositors increase their cash holdings, others diminish theirs, again total deposits remain constant. Much confusion will be avoided, therefore, if bank deposits be treated as bank credit, and an increase in these deposits as a credit expansion. This, as we have seen, may be initiated by an addition to the banks' cash holdings, or by a decision to reduce the reserve ratio of cash to deposits. Then bank loans are the mechanism, or the instrument by which deposits are expanded to the level which will give the desired reserve ratio.

It should be noticed, however, that fixed deposits, withdrawable on a certain date, are not as convenient a means of payment nor as liquid a form of resources as deposits subject to cheque. Hence some writers do not consider fixed deposits as money or credit. On this definition it is possible for an expansion of bank loans to lead to no increase in the volume of credit. For instance, in a depression, when few business men want to borrow, a bank may "lend" by buying Government bonds. The sellers of these bonds receive as payment a deposit, on current account, at the bank, and may then transfer it to a fixed deposit, to earn

interest. In fact it is a normal feature of a depression for current accounts to decline, and for fixed deposits to rise, and this indicates that business men do not expect to have to make such large payments as before. As business recovers, and more payments have to be made, some fixed deposits are not renewed as they expire, but the money is placed on current account to be drawn against in the course of business.

This distinction between fixed deposits and deposits subject to cheque is convenient, but not rigid. The practice varies from country to country and from bank to bank; interest bearing accounts are sometimes terminable at short notice, and some banks allow customers to draw cheques on interest bearing deposits. It would be quite feasible for the banks to abolish fixed deposits and to pay a low rate of interest on all deposits. If all the banks did this, and all offered the same rate of interest, their deposits would remain at about much the same level as before the change, since the public's cash holdings would not be likely to vary. Any theory based upon the distinction between deposits subject to cheque and fixed deposits, or current accounts and interest bearing deposits would then be rendered untenable.

It is safest therefore to consider all bank deposits as money, and adhere to our analysis which makes deposits or credit vary with advances, while the public's cash holdings are constant. As long as the distinction between fixed deposits and current accounts is maintained in practice, we may gratefully use it to help us in deciding to what extent bank credit is being used as a means of payment or as a store of value—both of which, it will be remembered, are functions of money.

§ 9. *Instruments for varying the volume of bank credit.*

Bank loans are the instrument by which bank deposits are varied, so as to bring the reserve ratio to the desired figure. Loans generally take one of two forms; overdrafts and discounting bills of exchange. Of these the former is the more usual in Australia. When a bank discounts a bill, it gives cash or a deposit to the creditor equal to the value of the bill, less a sum representing interest for the period which must pass before the stated date of payment (or maturity) of the bill. In effect, the bank takes over the claim upon the borrower, by paying his debt to the creditor. The significant difference between overdrafts and discounts is that the latter "mature" on a given date, while overdrafts may be extended indefinitely, or, at least in theory, called in at short notice. To contract loans in the form of discounts, the banks need only decrease the quantity of new bills which they discount, as the old ones mature. To reduce overdrafts, customers must be called on to repay their loans, wholly or in part.

Whichever form of advance is employed, the banks have two alternative methods available for changing the quantity of their loans; the first is by asking a higher or lower rate of interest, and the second is by rationing. The former method has been less popular than the second in Australia, because it is believed that capital will be more attracted to a young country if it has stable interest rates. The manipulation of the rate of interest reacts upon borrowers' willingness to borrow. A fall in the rate of bank interest represents firstly a decline in the cost of production, and leads accordingly to some expansion of output, which requires additional finance. But the bank interest charges do not form a large enough part of the total

costs, in most enterprises, for this factor to be very important. More significant is the fact that other lenders, too, are forced to bring down the rate of interest which they require on their loans, and a reduction of bank interest rates tends to produce a downward movement in all interest rates. This means that it becomes cheaper to use methods of production which require a lot of capital, rather than simpler methods employing more labour. If the rate of interest falls from 6% to 5%, the sum of £300, for instance, would pay interest on the purchase price of sixty machines at £100 each, instead of only fifty. There will be an increase in the demand for machines and the like, and more people will be employed making them. Thus the makers of machines will require to borrow more from the banks for their working expenses. But this is only the beginning of the story. The extra people employed in making machines, etc., have wages to spend; and their greater demand for consumers' goods leads to an increased production in industries making consumers' goods. This too means a greater demand for bank advances. Once started, the boom tends to continue, until the banks have expanded their loans as far as appears proper in the circumstances.

A rise in the rate of interest works in the opposite direction. It is not so much the rise in the cost of production due to bank interest that leads to a decline in business activity, as the fact that as all interest rates rise, it does not pay to invest so heavily in machines and the like; the discharged employees in these industries demand less consumers' goods, and so depression spreads. Less credit is required for working expenses—except by firms whose positions are so shaky that the banks will not lend to them.

The other method of manipulating credit is to keep

the rate of interest fixed low enough to tempt borrowers, and to refuse customers loans when it is wished to contract credit, and to allow them to borrow more freely when it is wished to expand credit. In this case, the willingness of the bank to lend at the same rate of interest varies. This is called rationing, because the bank, when reducing its overdrafts, has to choose between its customers as to who shall be allowed to continue his overdraft, and to what level; different customers may receive different "rations". This method works even more directly than the manipulation of the rate of interest. A business man, called upon to reduce his overdraft, may have to sell off his stocks of goods at a loss. "Distress sales" of this kind, by driving prices down, make production unprofitable for other business men, and depression spreads.

Of course, both methods may be used together, especially where borrowing is done by overdrafts. While credit rationing is effective in reducing bank loans, an increase in the ration may not lead to an expansion of loans unless accompanied by a reduction in interest rates, for often a reduction in interest rates is required to stimulate investment and to make industry sufficiently profitable for business men to think about borrowing more from the banks.

Finally, a word may be said regarding the power of a central bank to control the credit policy of the ordinary banks. We have already noticed that a considerable expansion of credit is only possible if the quantity of cash available to the banks and public is increasing. This is another way of saying that a large credit expansion usually involves some "currency inflation", in the sense that the note issue increases. This is generally recognized, and it follows that if a

central bank has control of the note issue, and is not bound by legal restrictions, it can expand or contract credit, almost without limit. It can expand credit by offering to lend to the trading banks at a lower rate of interest; or by buying securities (e.g. Government bonds) on its own account. In either case it increases the quantity of cash in the hands of the public or of the banks, and the outcome is expanding loans and deposits. The contraction of credit may be accomplished by reversing this policy. The response of business men and borrowers is not always prompt, since other factors than the rate of interest affect the profitability of investing in machines, etc., and of expanding output. Nor does it follow, because a central bank has certain powers to control the policy of trading banks, that it deliberately sets out to do so continuously. When it does take action, its concern might be either with the general business situation, or with international gold movements.

Much of the foregoing discussion must be modified if a country has considerable fluctuations in its international trade, as is the case in Australia, but we reserve these modifications for Chapter IX.

CHAPTER III

PRICE LEVELS AND FOREIGN EXCHANGE

§ 1. *Price levels and their movements.*

It is a matter of everyday experience that the price of an article does not remain constant but fluctuates from time to time. The average price of Australian wool, for example, during the past ten years, has been as low as 8d. per lb. and as high as 16d. per lb. If we watch the prices of a group of commodities in which we are interested, we may find over a period of time that some of them fall, others rise, and others again show little change. But surveying these movements as a whole we often pronounce the general tendency to have been in an upward or a downward direction, or in other words we say commonly that "the general level of prices" has risen or fallen. In making a statement such as this we are aware that, even when the "general level" rises, some of the prices may not have altered, or may even have fallen, but the movement in the rest of the prices is considered sufficient to offset these.

A simple example may serve to make this clear. Let us suppose that we are considering the price changes of six commodities in three different years as follows:

TABLE 1.

Percentage Change in Price.

Commodity.	Year 2 compared with Year 1.	Year 3 compared with Year 2.
	%	%
A	+20	−5
B	+25	−4
C	Nil.	+3
D	+10	−10
E	+15	−20
F	−4	Nil.
Total	+66	−36
Average of six ..	+11	−6

If we compare year 2 with year 1, we find that commodities A, B, D, E have risen in price; F has fallen, while C has remained unaltered. But on the whole or on the average these prices have risen. Similarly if we compare year 3 with year 2, we find that A, B, D, and E have fallen in price; C has risen, while F remains unaltered. But again on the average these prices have fallen. It will be noticed that we speak of changes or movements in the general price level, for it is not possible to determine absolutely what the price level is at any given time, but only the relationship between the price level at different times.

§ 2. *Price levels and the purchasing power of money.*

In spending our income upon a group of goods and services we realize that because of price changes a unit of money will not always buy the same amount

of these goods and services at one time as at another. This fact is often expressed by saying that "the purchasing power of money alters". Some Australian wage-regulating authorities, for example, are required by law to declare from time to time a money wage which will purchase about the same standard amount of food, groceries, houseroom, etc., as some formerly declared wage would purchase at the earlier date. Since the prices of these things change the objective of maintaining this standard has been sought by varying the number of pounds and shillings in the wage. Sometimes the standard may be bought for £3 10s. per week and at other times for not less than £4 4s. In such conditions it is frequently said that the "purchasing power of money" is greater in the former case than in the latter. But it is important to remember that the purchasing power of money in question is its power to buy not one commodity alone, nor all commodities, but merely a particular collection of goods and services upon which a wage earner commonly spends his wages. If these goods and services are only a portion of total goods and services, what is true of their price changes may not be true of the price changes of all goods and services taken together.

Nevertheless, people often do speak of the "value of money" or the "purchasing power of money", meaning thereby the amount of things in general—all kinds of goods and services—which can be obtained for a unit of money. Since money appears on one side of all exchanges it is constantly being exchanged for all manner of goods and services. The change in the amount of things in general which can be obtained by the expenditure of £1 will depend upon how the prices of all these things have changed. Referring to the example above, if we were to make the supposition

that Table 1 gave an exhaustive list of goods and services, the average of the changes in price of all the commodities in the different years might be a rough indicator of the changes in the general level of prices. When the price of a single commodity rises, a £ will buy less of that commodity, or its power to purchase that commodity will have decreased. And assuming that we can get a good measurement of changes in the general level of prices, we can say likewise that when that general level rises, a £ will buy less of all the commodities taken together, or its purchasing power will have decreased. When the level falls, a £ will buy more or its purchasing power will have increased. This is the meaning of the saying "the purchasing power of money moves inversely with the general level of prices". As the general level of prices rises the purchasing power of money falls and as the general level of prices falls the purchasing power of money rises.

§ 3. *General price levels.*

While it is possible to conceive in this way of movements in a general price level of all kinds of goods and services, in recent years economists have been led to doubt whether there is much practical utility in the concept and whether it is not preferable to pay attention to movements in price levels which are general in the sense that they refer to the combined movement of a well-defined group of prices but not in the sense that they comprise all prices.

It is clear that the general price level of all commodities and services may move in a different direction from a less comprehensive price level. For example, changes in the amount of money required to buy the standard collection of goods which wage-regulating

authorities have in mind in declaring a living wage, are, as noticed above, not determined by changes in the general price level of all goods bought for consumption but by changes in the average price level of the goods which wage earners normally buy. The general price level might move, for example, if the prices of only such things as champagne, fur coats and first-class railway tickets rose, but the price level of the above-mentioned standard collection would not be affected, because the wage earner does not normally buy such things and they are not included in the standard collection. Hence the purchasing power of his money wage would remain unaltered. Indeed, since there is inequality of incomes, there are at least as many relevant levels of prices as there are grades of income.

So, too, a change in the purchasing power of money from the consumer's point of view may be very different from a change in its purchasing power as measured by the movement of a general level of prices. Money is used to pay for raw materials, machinery, labour, and partly-finished goods, as well as the finished goods which consumers buy. Changes in the general level of prices will be indicated only by changes in an average of the prices of all these intermediate products and aids to production, as well as of the finished products. It has been estimated that the money payments for final consumers' goods in the United States of America are only some 8% or 9% of the payments made for all other kinds of goods and services. Since prices of consumers' goods would figure so unimportantly in an average of the prices of all goods and services, it is not likely that the movement of such a general average would indicate at all accurately changes in the purchasing power of the money which

consumers spent. If we wish to measure these changes we must have recourse to changes in a price level of consumers' goods. Similarly for other purposes it may be necessary to examine changes in the price level of producers' goods, of wages, of exports, or of imports. If all these price levels moved together in exact correspondence, there would be little point in distinguishing between them. But as individual prices sometimes change differently as well as sometimes harmoniously, it cannot be assumed that these various price levels do move together. It will in fact be seen in the next chapter that different price levels sometimes move even in opposite directions.

§ 4. *The measurement of changes in a particular price.*

It will be convenient to approach the problem of measuring a general level of prices by considering the procedure usually adopted in measuring the changes of a particular price over a series of years. If we wish, for example, to measure the variation in the retail price of first grade butter in Australia between the years 1933 and 1934, the first step is to obtain the market quotations for each of the two years. We may obtain quotations of prices from a number of retailers every day or less frequently. The whole of the quotations for a year may be averaged in order to give an average price for the year. Let us suppose that the figures arrived at by this process are: 1933 1/3, 1934 1/6. Taking 1933 as the base year, or year upon which to base a comparison, and expressing the price of butter during that year by the figure 100, the corresponding figure for 1934 is 120. In other words, we have constructed a "price-relative" which shows that there has been a 20% increase in the retail price of first grade butter between 1933 and 1934. A "price-

relative" is the ratio of the price at any date to the price of the same item at the date chosen as base.

This is the kind of procedure which we could adopt in cricket when comparing over a number of years a batsman's progress or retrogression. Each of his scores for the season is recorded and the average for the season taken and compared with that for previous years. For example over five consecutive years his average may be 25, 27, 40, 66, 19. If, then, we take the first year's average as a base and call it 100, the others become in order 108, 160, 264, 76. A glance at these annual "score-relatives" shows us, quite as clearly as the actual score averages, steady progress until the fourth year and a sudden drop in the fifth year. And we have the additional advantage of being able to read, for example, that in the third year his batting average was 60% higher than in the first, and, in the fifth year, 24% lower than in the first.

§ 5. *Price index-numbers.*

So far we have been comparing like things—identical grades of butter or cricket scores made by the same batsman. The problem becomes more complicated when we attempt to measure the combined movement in the prices of a number of different commodities in two or more selected years.

The first step is similar to that taken in measuring the movement of particular prices. From market quotations the prices of each commodity are ascertained and averaged to produce the representative prices of each of the commodities for each of the years in question. Next, one year of the series, for example the first, is taken as the base year, and the average or representative price of each commodity for that year is taken as 100. Then from the representative-

prices for the other years "price-relatives" are calculated for each commodity for each year.

Thus, let us suppose that we have the following table of price-relatives representing the same information as Table 1 of percentage changes in price.

TABLE 2.

Price-Relatives in Several Years with Price in Year 1 as Base=100.

Commodity.	Year 1.	Year 2.	Year 3.
A	100	120	114
B	100	125	120
C	100	100	103
D	100	110	99
E	100	115	92
F	100	96	96
Sum of Price-Relatives ..	600	666	624
Mean of Price-Relatives ..	100	111	104

Comparing the two tables in order to discover whether they are really equivalent we notice in Table 1 that the price of commodity A rose 20% in year 2 as compared with year 1. If, then, as in Table 2 the price of A in year 1 be taken as 100 the price-relative for year 2 is 120. Further, since in Table 1 the price of A in year 3 was 5% less than the price in year 2, and since 5% of 120 is 6, the price-relative for year 3, still with year 1 as a base is 114 as in Table 2. Further comparisons of the two tables will show their equivalence.

We may now summarize or combine the price movements in relation to year 1 as represented by Table

2, by simply adding the price-relatives together to give the results shown in the last line but one of the table. Finally by dividing each sum by the number of commodities we arrive at the mean price-relative for all the commodities for each of the years.

The members of such a series of mean price-relatives for a number of commodities are called "index-numbers" of the combined or general movement of the prices of the commodities, because each member of the series is, in fact, a combination of the individual movements. Each index-number of the series is referable, in the first place, to the base of the series. For example, Table 2 shows that the index-number for year 2 is 111 compared with 100 for year 1, the base year. This may be expressed by saying that the general price level of these six commodities was 11% higher in year 2 than in year 1. In the next place, the index-numbers of the series are referable to one another apart from the base. This may be expressed by saying that, for example, the price level in year 2 was to the price level in year 3 as 111 is to 104.

But here a difficulty arises. If we refer to Table 1 we see that, by directly comparing year 3 with year 2, there was a fall of 6%. Reducing, therefore, 111 by 6%, i.e. by about 6·7, we get the figure of 104·3, which is not exactly the same as the figure 104 shown by the table of index-numbers derived by referring the prices of every year back to year 1. Both theory and practice, however, show that when a considerable number of commodities is taken, the discrepancies which arise in this way are usually neither large nor important.

It will be noticed that the problem of measuring changes in the level of prices of a number of commodities is the problem of constructing from a series of individual price changes an index-number which will give with reasonable accuracy a summary of all the

individual movements of the series. In the examples given above each commodity was treated as of equal importance and the procedure was to take an arithmetical average of all the price movements in each year as compared with the base year as the appropriate index for comparison. But there are certain other difficulties associated with this procedure. In the first place in constructing an index-number of changes in price levels we have to decide first what prices are to be selected. The choice will primarily depend upon the purpose which the index-number is intended to serve. For example, prices of imports will be relevant to an import price index-number; prices of food, houseroom and other necessities for a "cost of living" index-number. But in most cases it is impossible to get a complete inventory of the prices, for example, of all imports or of all exports and in practice care has to be taken to see that the prices used are a representative sample of the whole.

In the next place there is the problem of "weighting" or of the relative importance to be attached to the items entering into the index. If we were attempting to construct an index-number to show movements in the "cost of living" based upon retail prices, it would be misleading to attach equal importance, for example, to a change in the price per lb. of meat and in the price per lb. of mustard which play very different parts in the family budget. It is, therefore, necessary to allow, by a system of weighting, for the relative importance of the commodities whose prices are being considered.

In Australia roughly 20lb. of tea are consumed to 1lb. of cocoa, 10lb. of sugar to 1lb. of rice. And at least ten times as much money is commonly spent on either milk or butter as on cheese. If, therefore, the prices of 1lb. of tea and of 1lb. of cocoa are about

equal, a price change of 1% in tea is about as important in actual expense as a price change of 20% in cocoa, assuming that the same relative quantities are purchased at both times. Likewise a change of 5% in the price of milk or butter is about as important as a change of 50% in the price of cheese.

Let us suppose that we wish to construct index-numbers of the retail prices of food as commonly used. We may first set down the various items of some standard or average weekly household budget, such as meat, bread, butter, mustard, etc., and then, opposite them, the corresponding sums of money actually spent on these several items at the first date which we wish to include in our series of index-numbers. Then we may vary each of these sums according to the change in price, between the first and second date, of a pound, a loaf, etc., of each item, and so find the corresponding expenditure on each item at the second date. The ratio of the total expenditure at the second date to that at the first date gives an index-number of the price level at the second date, as compared with the first date, which allows for the relative importance of each item in the household budget.

It will be seen that our procedure amounts to exactly the same thing as to take the quantities of various items consumed at the first date, and then to find the sum required to purchase all those quantities at the prices ruling at the first date, and likewise at the prices ruling at the second date. Thus we apply to both sets of prices the same set of multipliers and these multipliers are called the "weights" of the respective items. These weights are not necessarily physical weights in the ordinary sense, although they are often equivalent to them. For example, in computing a general cost of living index-number the price of a tram-ride, or of a hair-cut, which have no physical

weights, would need, equally with the price of tea or of meat, an appropriate multiplier or "weight".

We can also regard the separate expenditures on the various items at the first date as "weights" or multipliers *to be applied to the price*-relatives for the second date compared with the first date. So we may use as "weights" either the original quantities and apply them to the prices from time to time; or we may use as "weights" the original *expenditures on the various items and* apply them to the price-relatives from time to time. The former method, or "market basket of commodities" method, is the one commonly used in Australia. "The essential feature of this is that a fixed *list of commodities is drawn up*, and it is assumed *that* a definite number of mass-units of each is consumed every year . . . . the ratio which the aggregate expenditure upon this 'economic unit' every year bears to the aggregate expenditure thereon for *the basic year constitutes the price-index for the former* year."[1]

If we recur to our example of the batsman's average, it is clear that our procedure in taking his average over a series of years treats all scores as of equal *importance and fails to take* account of the possibility that some of the scores were made under easier conditions than others. In each year the teams met varied in strength and a good score against indifferent bowling is *less* meritorious than one made against good bowling. *Similarly different* weather conditions may mean that even a small score made on a "sticky" wicket was better than a large one made on a good wicket. We might, therefore, if we had to select a Test team, get a more accurate picture of the batsman's performance by allowing *weight to these* considerations. For example we might say that all scores made against

[1] *Commonwealth Labour Report*, No. 1, 1912, at p. 11.

teams X, Y, and Z, or made on a wet wicket, were to be doubled for purposes of comparison, and all scores made against teams A, B, and C, or on a good wicket, were to be halved. This would mean in other words that we had weighted our figures.

An example will show one method of applying a system of weighting and will also show how different results may be obtained from weighted and unweighted index-numbers.

Let us suppose that the commodities lettered A, B, C, D, E, and F in Table 2 were bread, meat, rice, sugar, butter, and cheese and that the sums spent in year 1 on these commodities in a fortnightly budget were 10/-, 20/-, 1/-, 6/-, 10/-, and 1/- respectively. The unweighted index-number for year 2, with year 1 as a base (100) has been worked out at 111. Now let us find a weighted index-number by applying these given expenditures to the price-relatives for year 2.

TABLE 3.
Weighted Price-Relatives.

Commodity.	Price-Relatives.		Expenditure at Prices of	
	Year 1.	Year 2.	Year 1.	Year 2.
			Shillings.	Shillings.
A. Bread ..	100	120	10	12·00
B. Meat	100	125	20	25·00
C. Rice	100	100	1	1·00
D. Sugar.. ..	100	110	6	6·60
E. Butter ..	100	115	10	11·50
F. Cheese ..	100	96	1	0·96
Total ..	..	.. ..	48	57·06
Index ..	..	.. ..	100	118·9

From this Table 3 we see that the expenditure of 48/- on these commodities at the prices of year 1 will, because of the changes in the prices of year 2, increase to 57·06 shillings or in the ratio of 100 to 118·9. So if the price level of year 1 be taken as base 100 the index-number for year 2 is 118·9, which indicates an increase of nearly 19%, and this is very different from the unweighted index-number 111, which indicates an increase of only 11%.

It is easy to work out the index-number with different weights, for example, in the case of a family distributing the same original expenditure of 48/- rather differently among these commodities, viz.: Bread 14/-, meat 16/-, rice 2/-, sugar 4/-, butter 10/-, cheese 2/-: total 48/-. The index-number for these "weights" will be found to be 118·0, which indicates a rise of 18% as compared with nearly 19% with the first weights. But this is a small difference compared with that arising from the "unweighted" index-number, which, however, is really a weighted index, the weights being assigned on the unrealistic assumption that the same sum was spent on rice as on meat and as on each other commodity.

As "unweighted" and "weighted" index-numbers have been shown to be somewhat different, it may be asked whether different sets of "weights" will give different series of index-numbers. One great virtue of index-numbers arises from the fact that, unless prices of the various items are moving very discordantly, quite considerable alterations may be made in the weights without producing important alterations in the index-numbers. This is especially true when the index-number is a summary of the price-changes of a large number of different items of goods and services. For example, even if Mr X's family budget contains

20% more meat, 20% less milk, 10% more rice, and so on than the standard family budget, it will be found that in normal times the expense of Mr X's family budget will increase or decrease in nearly the same proportion as the standard family budget. But in abnormal times, when prices of the various items are moving very discordantly, this does not necessarily occur.

We must beware of a tendency to attach too much importance to price index-numbers. It is fatally easy when considering their construction to warn ourselves of their imperfections, but in their practical application to forget our warnings. Even with the most judicious weighting, price index-numbers merely show how the average of prices moves. A price index-number may even conceal important movements in price. For example, between the periods the index-number may remain constant because only small variations in individual prices have occurred which have offset one another. Or, between those periods, the index-number may have remained constant as the result of much larger variations in individual prices which have also cancelled out. In practice, however, while few people may have been affected by the small variations, great sections of the population may have been seriously affected by the large variations. Again, the longer the period over which comparisons are made, the less reliable the index becomes. The sampling of prices may easily cease to be representative, and the weighting become obsolete. A cost of living index may originally have been based on a fair regimen for the people concerned, but over the course of years, for example, rayon may take the place of cotton, or radio supplant the gramophone. It is unnecessary to enter into a discussion of the various statistical devices to

meet these and other difficult problems of index-numbers. The construction of an index-number comprehends the collection and scrutiny of price data, a very laborious business. It is important, however, to remember that price index-numbers, however well computed, cannot be more reliable than the data on which they are based, that if constructed for one purpose they are not necessarily suitable for any other, and that for many purposes they are useful approximations rather than infallible guides.

Table 4 sets out three price index-numbers which are important in Australia.

TABLE 4.
Australian Price Index-Numbers.

	Retail Prices. All Items (thirty towns in Australia). Base Year 1928=1,000.	Wholesale Prices. Non-Rural Commodities (Sydney). Base Year 1928=1,000.	Export Price Index (Australia). (Australian Currency). Base Year 1928=1,000.
1921	1,010 (Nov.)	1,123	918
1922	964 (Nov.)	1,055	928
1923	993 (Year)	1,062	1,100
1924	977	1,055	1,302
1925	988	1,003	1,145
1926	1,003	976	1,012
1927	994	992	995
1928	1,000	1,000	1,000
1929	1,023	987	836
1930	968	956	629
1931	867	967	569
1932	827	951	558
1933	801	920	629
1934	821	893	683

It will be seen that if we accept the retail price index-number as an indication of how general prices have moved or how the purchasing power of the Aus-

tralian £ has altered, there was a steady period between 1921 and 1929, but between 1929 and 1933, a fall of the order of 20%. If, however, we take as our guide the wholesale price index-number, we find that in the latter period the change has been much smaller—of the order of 10%. An inspection of the two index-numbers of retail and wholesale prices shows also that retail prices may rise when wholesale prices fall, as in the years 1925, 1926, and 1929 or fall when wholesale prices rise as in the years 1927 and 1931. This serves to remind us that although, over a period of years, the trend of wholesale and retail prices may be the same, yet the two sets of prices by no means always move in the same direction or at the same rate. Indeed, it is not to be expected that they should, for the regimens of the two indexes and their weights are quite different. The export price index-number relates only to the chief exports of Australia, which are mainly "primary products", and the index-numbers illustrate how sharp a fall there was after 1928 and how much price recovery has followed since 1932.

§ 6. *Foreign exchange.*

When anyone deposits in a Sydney bank a country cheque or an interstate cheque, he is usually charged by the bank anything from 6d. to 2/6 "exchange". This sum is really the bank's commission charged to its customer for the service of collecting the proceeds of cheques for him from the country or from another State. This charge is a source of income to the bank and has nothing to do with the problem of "exchange" or "foreign exchange" or the "exchange rate", as it is indifferently called. We may approach the latter problem by considering what courses are open to a debtor in Sydney who wishes to pay a debt of £100 to his

creditor in Melbourne and is anxious to do it at the least possible expense. He could send to his creditor Commonwealth notes to that amount, he could send the sum in postal notes or by cheque, or send goods or gold to his agent in Melbourne to be sold and the proceeds applied to the payment of the debt. If he sends notes or gold there is always the risk of loss or the cost of insurance. If he sends postal notes, the charge made by the Post-Office has to be met. It may not be convenient to send goods to his agent, and the cheapest and safest way will usually be by cheque, even allowing for the bank's charge for collection. In such a transaction, since both debtor and creditor are dealing with the same currency, no difficulty arises from a consideration of whether £1 in Sydney is worth more or less than £1 in Melbourne. The debt is settled by a transfer of Australian £'s, whether in the form of a cheque or in notes. The problem of foreign exchange or of the exchange rate arises when a debtor and a creditor live in countries which use different monetary units. We shall take as our example the exchange rate between Sydney and London at the risk of any confusion arising out of the similarity in the name of the monetary units. The problem is how many Australian £'s the debtor in Sydney will have to pay in Sydney in order to discharge a debt for example of £100 (English) in London. Once again the debtor may be considered to have a choice of methods, but with this important difference, that the relative value of Australian £'s and English £'s enters into the problem. If the debtor sent to his creditor 100 Commonwealth pound notes, the creditor would not consider that the obligation had been met, because Commonwealth notes are not legal tender in London. The debtor might, however, transmit the sum through the

Post-Office or through a bank, in which case he pays a certain number of Australian £'s, and in addition the charges made by the Post-Office or by the bank. He might also transmit gold, or send goods to his agent to be sold in London and the proceeds transferred to his creditor. In all cases he must pay in English £'s to his creditor. Once more we may assume that he will choose the least expensive method. Which will prove to be the least expensive will depend, for example, on whether what he has to pay for English £'s bought from a bank or post-office is more or less than the cost of sending gold or goods. When both England and Australia were, before the war, on a gold standard, the problem of foreign exchange was comparatively simple. In effect, both countries were using the same currency and each monetary unit represented a similar amount of gold. The mint par of exchange, as it was called, between the two countries, was simply an expression of the physical relationship between the weight of gold represented by the two monetary units. In the case of London and Australia, the mint par was one of equality—100 Australian £'s were equivalent to 100 English £'s. If the actual exchange rate varied at all considerably from the mint par, a debtor in Sydney might find that it was cheaper, instead of buying English £'s through a bank, to pay the freight and insurance and bear the loss of interest involved in sending gold to London. Because of the cost of transport and the time involved, the Australian pound and the English pound, although both gold, were not one and the same thing, but they were nearly equal in value. Now, however, both countries—England and Australia—are no longer on a gold standard, and the two £'s, English and Australian, have nothing in common but the name. There is no reason

why we should be surprised if they exchange one for the other on very different terms from that of equality. Actually for a while in 1924 when both countries were also "off gold" 100 English £'s could be bought for 97½ Australian £'s, and since 1931 it has cost from 125½ to 130½ Australian £'s to buy 100 English £'s. The common impression, however, that the two £'s should be equal, or that the exchange rate between Sydney and London should be at par, is due to the fact that over a long period the two were kept nearly equal through the operation of the gold standard. Probably if the Australian £ were called an emu or a kangaroo or a Canberra, we might not expect this equality any more than we expect the dollar or the franc to be equal to the £.

In the financial columns of the daily newspaper will from time to time be found such a statement as this: "Exchange with London on the basis of £100 London.

AUSTRALIA ON LONDON.

Buying.	Selling.	Usance.
£125 0 0	£125 10 0	T/T"

This is a statement of the exchange rate on a given date. T/T stands for telegraphic transfer. The whole statement means that Australian banks are offering to buy for 125 Australian £'s a claim to 100 English £'s transferred to them by cable. At the same time they are offering to sell at once by cable a claim to £100 (English) for £125 10s. in Australian money. In other words it costs £125½ (Australian) to buy £100 (English) and £80 (English) to buy £100 (Australian). Because of figures such as these it is sometimes believed that banks which undertake dealings in foreign exchange make a profit of the difference

TABLE 5.

Exchange Rate.

Australia on London (Telegraphic Transfers).

Year.	Bank's Buying Rate for £stg. 100.
Average for Year.	£A.
1911	100·25
1912	100·38
1913	100·35
1914	100·50
1915	101·08
1916	101·31
1917	100·92
1918	100·63
1919	100·63
1920	100·58
1921	100·99
1922	99·69
1923	98·75
1924	97·51
1925	98·58
1926	99·79
1927	100·13
1928	100·48
Date of Change.	
19 March, 1928	100·50
22 July, 1929	100·75
3 Sept., 1929	101·00
10 Oct., 1929	101·25
18 Dec., 1929	101·63
28 Jan., 1930	102·00
17 Feb., 1930	102·50
10 March, 1930	103·50
24 March, 1930	106·13
9 Oct., 1930	108·50
6 Jan., 1931	115·13
13 Jan., 1931	118·00
17 Jan., 1931	125·00
29 Jan., 1931	130·00
3 Dec., 1931	125·00
Average for Year.	
1932	125·00
1933	125·00
1934	125·00

between £100 and £125½ every time that they sell exchange. But a little thought will show that this is not the case. A bank offers to buy for £125 and to sell for £125 10s. It is necessary to take both these transactions together. If a bank were gaining £25½ every time it sold exchange in London, it would just as certainly be losing £25 every time that it bought exchange on London. What a bank buys for £125 it sells for £125 10s., and on the two transactions it makes a commission of 10s. It acts as a middleman between those who want to sell and those who want to buy claims to English £'s. Dealing in exchange is a profitable occupation for a bank, but the profit consists only in a commission of the same nature as that made when it collects a country cheque on behalf of one of its customers.

§ 7. *Instability of price levels and of foreign exchange.* So far we have explained what is meant by changes in a general level of prices and what by an exchange rate. Movements in the one may indicate variations in the purchasing power of a unit of currency in terms of goods and services. Movements in the other may indicate variations in the purchasing power of a unit of currency in terms of other currencies. But the explanation of what causes the purchasing power, for example, of an Australian £ to vary either in terms of goods and services or in terms of another currency, is postponed until later chapters. In the meantime we have yet to discuss the effects of variations in price levels and in exchanges.

Stability in general price levels over a long period is uncommon. In many cases the rise or fall has not been severe or has been spread over a sufficiently long space of time for its effects to be slight. In other

cases, however, the rise or fall has been so sudden or so severe as to have extremely important effects. We need go no further back than our own history of the past twenty years, which furnishes us with two striking examples of instability, namely the rise in prices 1914-20 and the fall in prices 1929-34. In the early part of this chapter we have thrown some doubt on the practical utility of an index-number which purported to cover the prices of all manner of goods and services. In these two instances, however, it is true to say that the general trend of all price indexes was upward in 1914-20 and downward from 1929-34. The latter movement may be seen in Table 4.

Stability in exchange on London has been much more characteristic of Australian financial history, as may be seen from Table 5; but even here there have been since 1911 two periods of instability, one slight, from 1923-25, the other serious, from 1928-31. These examples of instability of price levels and of exchanges have been purposely selected from Australian history as being familiar to most of our readers. Examples of more severe fluctuations may be found in the history of some other countries since 1914. The rise of prices to fantastic heights in post-war Germany and the accompanying dislocation in the exchange rate with other countries are extreme cases of movements which, to a lesser degree, characterized most countries during and after the war.

§ 8. *Effects of instability of price levels.*

The effects which we are about to consider are the effects of great instability in price levels. Small or steady rises or falls in price levels are of little moment compared with large or violent fluctuations. Again, if a rise or fall, however large, in the price level

affected all prices and incomes equally, such movements would be of little importance. But actually changes in price levels affect prices and incomes unequally—some people gain, others lose, some become wealthy, others lose their employment, some find their legitimate expectations disappointed, others become "profiteers" almost against their will. In the first place, when prices rise or fall seriously, a redistribution of income takes place between different classes in the community. Generally speaking, those whose claims to income are fixed money claims lose by a rise in prices and gain by a fall. Their income is expressed in terms of a fixed number of units of currency which will buy less at the higher price level and more at the lower. When prices rise, therefore, debtors gain at the expense of creditors. The debt is contracted in terms of money and the obligation becomes lighter in terms of goods and services with every rise in the price level. Similarly holders of Government stock carrying a fixed return stand to lose by a rise in prices, for their income from the stock will then purchase less. Those individuals whose salaries or wages are comparatively fixed, in the sense that they are not easy to alter quickly in nominal amount, also stand to lose when prices rise. It is true that a serious rise in prices is often made the occasion for securing increases in salaries and in wages, especially under a wage-fixing system which has regard to variations in the cost of living, but in practice if the rise is rapid there is always a tendency for wages and salaries to lag behind prices. "Prices go up by the lift—wages go up by the stairs."

If the rise in prices goes to extremes, as in post-war Germany, holders of fixed money claims, for example, creditors and Government stock holders, may find

themselves ruined by the almost complete loss of their incomes. In the case of Government stock holders, the Government gains because of the reduction in the weight of the internal public debt. Much of what is lost by those investors who have lent in return for a fixed money claim to future income, goes to the active entrepreneur who is dependent for his income, not on a fixed money claim, but on a variable element of profit.

On the other hand a fall in prices causes a redistribution of incomes in a different direction. Creditors and Government stock holders gain, because their money incomes will buy more at the lower level of prices. But if the fall goes far enough some debtors, private or public, may be forced to default, so that the gain to creditors from a serious fall in prices may be illusory. Similarly wage and salary receivers find their incomes increasing in terms of goods and services, but falling prices so affect production, as we shall soon see, that many wage earners and salary earners find no employment. Even when they are still employed, their money incomes may be reduced to bring them into relation with the new cost of living.

In the next place, production is seriously affected by rising and falling prices. If price levels rise sharply, the business man or entrepreneur stands to gain as long as money costs of production do not increase proportionately. Many of his costs are expressed in agreed money payments made in advance of the production of the goods. When the price level rises, the returns for the sales of his goods will be higher than the return on which he had calculated his expectation of profit. Exceptional profits are thus an effect rather than a cause of rising prices. No doubt there may be some illusion here for the increased profits at the new level of prices may not mean any more real income than

the anticipated profits at the old level. Nevertheless, rising prices stimulate enterprise with the hope of increased gain, and production expands. On the other hand, a sharp or continuous fall in the price level finds the entrepreneur with stocks on hand produced in the expectation of higher or even rising prices. These stocks now have to be disposed of at unremunerative prices. Moreover, his current production has now to be planned to meet still further falling prices. He attempts to reduce his money costs of production by increasing the efficiency of his business, by cutting out the least profitable lines, by reducing wages and overhead costs, etc. If he is not successful despite these efforts, he has to go out of business. Whereas rising prices stimulated him to expand production, falling prices force him to contract production. The adjustment to falling prices brings in its train unemployment and depression.

In the third place a sharp rise in prices encourages all kinds of wild speculation and the waste of resources while a sharp fall operates in the reverse direction by causing people to refuse to take risks and therefore the community is left with idle resources of capital and of labour.

§ 9. *Effects of instability of foreign exchange.*

As in the case of movements of price levels we are here concerned only with serious fluctuations in exchange rates and not with the small changes which take place even when exchange rates are most stable. Serious fluctuations in exchange rates act as a deterrent to international trade and to international borrowing and lending. The merchant who is arranging to sell goods abroad or to buy goods from abroad runs the risk that an alteration in the rate may reduce or destroy his anticipated profit and the deterrent

effect is not made any less by the possibility of unexpected gains. The greater risks and uncertainties introduced into international trade by unstable exchanges tend to reduce its volume. "It is most irritating to an English exporter, say, of motor cars, to Spain, to conduct his business under fluctuating exchanges, since he will be unable to produce a Spanish catalogue quoting fixed peseta prices. If he risks it, future exchange fluctuations may wipe out all his anticipated profits, especially if he gives long credits and is trading for small profits on turnover."[2] It is said, for example, that the firm which built the Sydney Harbour Bridge lost money on the contract since part of the payment was made after a sharp fall in the rate between London and Sydney.

It is true that the risk of fluctuating exchanges may be shifted by merchants to those who deal in foreign exchange, but this means that the risks are only shifted and not abolished. Someone has to pay a special section of people who take these risks. If the exchanges were stable the risks would disappear or be prevented from arising, and trading communities as a whole would be better off.

Not only foreign trade but also foreign investment is hindered by fluctuations in foreign exchange, for investors are likely to find that their anticipated gain is subject to the same kind of risk as that of the trader. Moreover, fluctuating exchanges offer great scope for speculation. Where shrewd foresight, advance knowledge, or a lucky guess can forecast the movement of an exchange rate, large fortunes are to be won and lost in the course of a few days. In cases like these the legitimate function of speculation in smoothing out rises and falls in price is exceeded.

[2] Angas: *The Coming Collapse of Gold,* 1933, p. 54.

CHAPTER IV

WHAT DETERMINES CHANGES IN PRICE LEVELS?

§ 1. *Expenditure and production: The price level of consumers' goods.*

"Teach a parrot to say supply and demand, and you have an economist." This saying, libellous though it may be, at least conveys some truth. Until a man knows when to say supply and demand, he will never be an economist. A large number of problems can be solved only when it is realized that a price always does correspond with a certain state of supply and a certain state of demand, and that changes in prices come through changes in supply or demand. Let us apply this to changes in price levels. The price level which attracts the most interest is the price level of consumers' goods—the things which we buy with our incomes. We shall leave other price levels, such as price levels of producers' goods—machinery and the like—and price levels of imports and exports, until later, and deal first with the factors which cause changes in the price level of consumers' goods. These factors can only be changes in the supply of consumers' goods or in the demand for them. The supply of consumers' goods is the quantity coming on to the market for sale. Unless traders are reducing or increasing the size of their stocks, the quantity coming on to the market is equal to the volume of current produc-

tion. The demand is simply the quantity which consumers are willing to buy at ruling prices. Or in other words, the demand must be equal to the total value of consumers' expenditure divided by the average prices of the things which they buy.

But a parrot who could say only this, would be a very poor economist. Indeed, economic analysis hardly begins until our enquiry is pushed back into the factors which determine supply and demand. Our present concern is with the forces behind the supply of and the demand for consumers' goods, for it is these forces which determine movements in the price level of consumers' goods. We seek factors whose changes provoke changes in prices, for it is changes in price levels that are important, as we saw in the previous chapter.

If prices are constant, an increase in consumers' expenditure represents an attempt, on the part of consumers, to buy more goods. Assuming stocks do not vary, their attempt can be successful only if the production of goods immediately increases by the same proportion as their expenditure. But, if the production of goods does not rise sufficiently, and if prices remain at their former level, some consumers will have money to spend, but will find no goods to buy. In such circumstances, however, prices will soon rise. For shopkeepers, meeting a heavier demand, will give larger orders to the warehouses; and the warehouses will have to compete with each other to get the limited supplies which are available from the original producers. The producers will naturally ask a higher price if they know that buyers are anxious to buy. So the warehouses, having to pay higher prices, charge higher prices to the shopkeepers; and finally the consumer finds that prices are higher for him.

On the other hand, if the production of goods

increases as quickly as, and in the same proportion as consumers' expenditure, prices will not rise at all. But if production cannot be increased at all, prices will rise, on the average, by the same proportion as consumers' expenditure.

Now if there were no savings being made, consumers' expenditure would vary exactly with the aggregate incomes of the community. The fact of saving complicates the matter, and we shall consider it a little later. For the moment, let us leave it out of account. Let us assume also that the efficiency of production of consumers' goods is neither increasing nor decreasing. Then a change in the price level of consumers' goods can come, only if incomes are increased without additional people being employed to produce immediately a similar increase in consumers' goods. If everybody's income were suddenly doubled, prices would rise. If this happened when everybody was employed, prices would simply be doubled. If, however, there were many unemployed, and much idle machinery and raw materials on hand, so that the production of consumers' goods could be immediately increased, then the rise in prices would be smaller. To take a less unlikely example, if workmen who were previously unemployed were engaged to build roads, or bridges, or even to make machines, and if their wages were paid neither from other people's savings, nor out of taxes, but by an expansion of bank credit, again prices would rise. These workmen would try to buy goods with their wages, and since nobody else is spending less (by hypothesis) prices would rise. Of course if the money to pay these workers were obtained either by borrowing from other people or by taxing them, *their* expenditure would be diminished by the

sum in question, and the total expenditure of the community would remain constant. Then prices would not rise.

Again, if the workmen were employed, not to build roads or houses, but to produce goods for immediate consumption, then production of consumers' goods would be increased by the same proportion as expenditure, and prices, on the average, would remain the same as before.

Apart from hoarding, the prices of consumers' goods rise with every increase in income which is not earned by the production and marketing of additional consumers' goods. The extent of the rise depends upon the phase of the business cycle. Prices will rise higher and more quickly, the less unemployment and idle capacity there is, and the smaller are the stocks of raw materials. Similarly a fall in prices will follow a decline in such incomes.

In so far as people "hoard" money, i.e. neither spend it, nor lend it, this tends to produce a fall in prices, because expenditure is reduced, without any simultaneous decline in production. If people "dis-hoard", i.e. spend or lend money previously hoarded, the total expenditure is increased and prices tend to rise.

§ 2. *Savings and investment.*

The exact significance of saving, in this connection, has been made much clearer, for English readers, by Mr J. M. Keynes's latest theory of money and the price level. In his earlier books,[1] Mr Keynes followed what is known as the Cambridge approach to the quantity theory of money. We shall later glance at the quantity theory and its various forms. But our present interest lies with the more recently developed theory in which Mr Keynes definitely abandons his

[1] E.g. *A Tract on Monetary Reform.*

old approach.[2] According to this theory, stability of the consumers' goods price level is most likely to be disturbed by a change in the "efficiency earnings of the factors of production", e.g. wages *per unit of output*; managers' salaries *per unit of output*, etc.; or by a divergence between (voluntary) savings and the money spent on investments, i.e. the production of capital equipment and goods not for immediate consumption. If wages per unit of output are increased, income will have risen, without any proportionate increase in output. As we saw in § 1, prices will then rise. This is in accordance with the explanation given above. The more novel point is the relationship between savings and investment. "Savings" are unspent income; they may be hoarded, or lent to somebody else. "Investment" is the employment of labour and other resources for the production of machines and goods not for immediate consumption. When money is invested it is in fact paid out as wages and salaries, and as purchase money for materials, so that somebody finally has the chance of spending it on consumers' goods. If savings increase, this will not involve any decline in prices, provided that investments increase by the same amount, so that what the savers save is spent by the employees of the works where the investment is made. If savings diminish, prices will not rise, provided that investments decrease by the same amount as savings. The people who save less, now spend more, but this is offset by the diminished spending of the people who used to be employed by the investment of savings. It is when savings

[2] *A Treatise on Money*. We do not present Mr Keynes's equations. Judging from his lectures at Cambridge in 1932, the equations are being reconsidered with a view to clearer expression. In any case the important thing is not the equations, but the theory which underlies them; and this, although introduced to Mr Keynes's readers in algebraic form, had in its essentials been explained by continental economists without recourse to equations.

increase *relatively* to investments that the decline in spending by savers is not offset by the spending of those employed by the investment, and, following our analysis, prices fall. If investments increase *relatively* to saving, then the spending of those employed by the investments more than compensates for the reduction of spending by the savers, and prices of consumers' goods tend to rise.

It is easy enough to see how investments may be less than savings, if people do not lend their savings, but hoard them. But investment can also exceed savings, as a result of monetary and banking policy. For employers to receive as loans a sum in excess of what income-receivers in general have saved, there must be some external source from which either money or credit can be introduced. If the only money were gold coins, people might lend *less* than they saved, but for *more* to be lent, additional coins must come into the country. With a purely paper currency, investment could be made to exceed savings, by printing additional notes and lending these to the employer. And with a banking system, the granting of additional credit—in excess of the savings already lent to industry—can make possible an excess of investments.

Now it has long been taught that monetary and banking policy have an important influence upon commodity prices. Mr Keynes's chief contribution to English monetary theory is his insistence that this influence is exerted through such control as monetary and banking policy has upon this relationship between savings and investment. The point may be developed as follows:

Clearly a considerable degree of investment is made directly by individuals who purchase shares in newly-floated companies, or who have houses built for them-

selves, or by companies which devote portion of their profits to further expansion of their plant. In so far as these investors do not borrow the money they invest, they must save it from their income. If you buy shares you cannot with the same money buy clothing and food. This type of investment is equal to the savings which the investors devote to it. But investors may borrow from the banks, and their borrowings may, or may not exceed the savings of bank depositors.

Let us recall the analysis given on pages 42-3. If a depositor with a cheque account decides to save more, neither bank deposits nor cash reserves are increased. This depositor's balance is higher, but the shopkeeper, from whom he would have bought if he had not saved, has a lower balance at the bank. Since in this case the reserve ratio is unchanged, there will be no expansion of advances, and no increase in investment. That is, savings will have risen relatively to investment. If this sort of thing happens on a large enough scale, prices will fall. We also saw that the same thing *may* happen if people save in place of making cash purchases, and take the saved cash along to the bank. The public's demand for cash depends chiefly on the level of incomes, spending habits, and the organization of industry, and these factors may have not changed sufficiently for the bank's cash to increase appreciably. If it does increase, it does not follow that the increase will be such as will promote an expansion of advances exactly equal to the savings in question. It is quite possible that savings will increase relatively to investment, and prices will then fall.

The most probable cause of an excess of investments over savings, and consequently of a rise in prices, is an increase in the cash of the trading banks through either (*a*) an influx of gold, or (*b*) increased loans

by the central bank, either to the trading banks, or to Governments. Then, as we have seen, the volume of advances will tend to increase. If carried far enough this will lead to an excess of advances over the savings lent to the banks, and to a rise in prices.

The chief possibility of a credit expansion, apart from this, is that banks should be prepared to work on a lower cash reserve ratio. The scope for this appears small, although in many countries the reserve ratio is allowed to drop somewhat in times of prosperity. All large increases in the price level of consumers' goods have been associated with the two factors noted above.

Does this theory cover all cases of rising and falling price levels? To explain what happens in war-time inflation requires a rather broad usage of the word investment. If it applied only to the production of machines and similar capital equipment, it would not be possible to attribute the terrific rise in prices that accompanied inflation in the last war to an excess of investment over savings. The Government borrowings were spent largely on munitions and other war material, and it seems peculiar to regard this as an investment! But the people who were receiving wages and other payments for making these things were able to demand more consumers' goods, although they themselves were not adding to the production of consumers' goods. Thus the prices of these goods rose. To make Mr Keynes's theory applicable to all cases, investment must be defined as the production of any goods not considered as consumers' goods. But for normal times, Mr Keynes's theory does not require such peculiar definitions, for it is largely variations in the production of plant and machinery which constitute the changes in investment which react upon

the prices of consumers' goods. But investments include also the building of roads, houses, and even public works like swimming baths—anything, in fact, which pays out incomes to people who are not themselves making consumers' goods. Any increase in such incomes, unless offset by an increase in savings, will cause prices to rise, unless, of course, costs of production are falling.

§ 3. *Monetary policy and the price level of consumers' goods.*

The decisions to increase or decrease investment are made by business men, builders, local government bodies, and Governments. Monetary policy affects prices only by influencing these decisions. We have already considered the extent to which banks can "create credit". Clearly they can only encourage investment with safety up to a certain point, for if prices rise and business expands, so does the demand for bank credit. But a central bank, if it be not bound by restrictions upon the level of its note issue or its lending policy, can lend to the banks and to the public, and so encourage investment to rise above savings. In the last analysis, power to control prices involves power to vary the note issue. Only if this can be expanded as prices rise and business increases, can credit be continually extended and investment kept up above savings, without the banks' cash reserve ratio falling, and checking the credit expansion.

The chief instrument for controlling the volume of credit, as we saw in Chapter II, is the rate of interest. Given the demand for goods at a certain level of prices, there will be some rate of interest at which employers will find it profitable to invest in new capital equipment, with a view to producing their

output at lower cost, and either increasing sales or pocketing larger profits.

In general, the lower the rate of interest, the more incentive there is for investment to increase, all other things being equal. But sometimes investment is much brisker with a high rate of interest than with a lower one. This is because the "other things" are not equal. In particular there are two "other things" which are liable to vary from time to time. One is the expectation of selling more goods at slightly lower prices. When trade is active, each employer thinks that if he could get his selling price down just a little, he could sell a lot more; or it may be that he could sell a lot more if only his plant were somewhat larger. In these circumstances, a reduction in the rate of interest, even if the rate does not fall very low, is likely to encourage investment. But if sales have been falling, and markets are dull, the rate of interest may fall very low, and employers may still not think it worth while increasing their plant.

The second "other thing" is the extent to which existing capital equipment is fully employed. Clearly, even if there is a chance of selling more goods, manufacturers will not invest in new plant while they have machines standing idle, even though the rate of interest is very low. But when all plant is operating at full capacity, new investments may be made at even a high rate of interest.

Thus, although it is likely, as a rule, that a reduction in the rate of interest will stimulate investment, and so either raise prices or at least *check their fall,* it may prove very difficult, in a deep depression, to raise prices by this method. Certainly we cannot say that once the rate of interest falls below a certain figure (e.g. 3½%), the price level will rise, and that

when the interest rate is above this figure, prices will fall. In fact, low prices have often persisted despite generally low rates of interest. But if interest rates had remained high on those occasions, the recovery of prices would have been still slower.

This sluggishness of prices to move in response to a low rate of interest led Wicksell to develop the theory of the "natural" rate of interest, and of its divergence from the market rate of interest. The term "natural" rate is not a happy one, for Wicksell does not mean by it the rate of interest which is "natural", but the rate of interest at which the borrowings of business men and others would be equal to the voluntary savings of the community. He shows that in a "natural" economic system, with no money, there could only be made available to borrowers the same quantity of resources as savers were prepared to forgo, and though both savings and borrowings for investment would vary with the rate of interest and with other factors, they would always be equal. If, in the real world, the actual market rate of interest is at this level, voluntary savings will be equal to investments. But if the banks are prepared to lend at a lower rate of interest than this "natural" rate, credit is expanded in excess of savings, and prices rise. Alternatively if the market rate is above this "natural" rate, prices will fall. The natural rate varies with the profitability of using much capital in production rather than using simple direct methods requiring little capital. In a depression, for reasons noted above, the "natural" rate falls very low, and may well remain, for some time, at a level below the rate of interest which the banks regard as the lowest possible level. Thus although the actual market rate of interest may be very low, it may still be higher than the natural rate. As long as

this continues, according to Wicksell, the price level will continue to fall. Conversely, in a boom, even a high market rate of interest might be below the natural rate, and prices continue to rise. Either a high or a low market rate would give a stable price level of consumers' goods, if it happened to coincide with the natural rate.[3]

The bankers cannot know what the natural rate is. All one knows is that if prices are rising, the market rate is below the natural rate, and if prices are falling, the market rate is above the natural rate. Thus bankers (if they understood this) would know *in which direction* the rate of interest must be altered to check the rise or fall of prices, and by trial and error they might find the natural rate appropriate to the conditions existing at any time. But, as later critics have pointed out, this would not be true if, owing to technical progress, for instance, the output of goods were increasing. In this case, with savings and investment equal, and total consumers' expenditure constant, prices would have to fall in order that the increasing output be sold. In a progressive community it would be almost impossible to decide how far any given decline in prices was due to the market rate being above the natural rate of interest and how far to increasing production.

§ 4. *The quantity theory.*

In the preceding sections we have considered monetary policy as reacting upon the flow of consumers' expenditure relatively to the flow of goods produced, and thus influencing the prices of consumers' goods. But the traditional approach to the problem of price levels is to consider them as the reciprocal of the

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[3] See Wicksell: *Vorlesungen uber Nationalökonomie,* Vol. 2, pp. 216 *et seq.*

value of money. When the price level changes, the purchasing power of money—over the goods included in the price level—moves in the opposite direction. Thus the problem is turned round, and the question is, what determines the value of money in terms of goods? The exchange value of any article, in terms of other things, depends upon the demand for it and the supply of it, and the value of money is conceived of as determined by the demand for money and the supply of it. According to J. S. Mill, who wrote in the middle of the nineteenth century, money is demanded when goods are offered for sale, and supplied when people want to buy goods. "Each seller of goods is a buyer of money . . . . It is indifferent whether, in characterizing the phenomena, we speak of the demand and supply of goods, or the supply and demand of money. They are equivalent expressions." The supply of money he defined as "the quantity of it which people are wanting to lay out; that is all the money they have in their possession, except what they are hoarding". And the demand for money "consists of all the goods offered for sale". If the quantity of goods and all other things remain the same, "the value of money varies inversely as its quantity, every increase in quantity lowering the value, and every diminution raising it, in a ratio exactly equivalent".

So far, provided it be remembered that the quantity of money is the quantity laid out or spent, the upshot of the theory is similar to that expounded in § 1 of this chapter. Mill's next step is to emphasize that "the quantity of money laid out is not the quantity of money in circulation", because each piece of money passes from hand to hand many times before all the goods for sale are bought. If the quantity of goods on sale and the number of times those goods are resold

are constant, "the value of money will depend upon its quantity, together with the average number of times that each piece changes hands in the process". The latter factor he calls "the rapidity of circulation". Later writers have employed the term "velocity of circulation", but Mill suggests that the "efficiency of money" would be a better concept. He continues his enquiry by setting out many "qualifications with which the proposition must be received, that the value of the circulating medium depends on the demand and supply, and is in the inverse ratio to the quantity; qualifications which, under a complex system of credit like that existing in England, render the proposition an extremely incorrect expression of the fact".[4] The essential proposition of the quantity theory has probably never been better stated than by Mill. In so far as later writers have added anything, it has been in the elaboration of the qualifications.

The best known modern version of the quantity theory is that developed by Professor Irving Fisher.[5] This has been thrown into the form of an equation, and consequently gives an impression of precision and completeness which, however, disappears upon closer examination. Assuming no credit, but only a currency of notes, the equation of exchange is construed as follows. The fundamental proposition is that all the money spent is equal to the value of all the goods bought.

Let T be the volume of trade.

Let P be the average price per unit of goods traded.

Let M be the quantity of money in circulation.

Let V be the velocity of circulation of money.

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[4] See *Principles*, Bk. III, Ch. VIII.

[5] *The Purchasing Power of Money.*

Then $MV = PT$, while

$$P = \frac{MV}{T}$$

And changes in P are proportionate to changes in the "general price level".

This conclusion adds nothing to Mill's theory. But to allow for credit, let M be the quantity of money in circulation *outside* the banks and V the velocity of its circulation.

Also let M^1 be the quantity of bank deposits subject to cheque, and V^1 their velocity of turnover.

Then $MV + M^1V^1 = PT$,

$$\text{and } P = \frac{MV + M^1V^1}{T}$$

This formulation has received much criticism;[6] we need only mention two grounds for objection. The first is that the "volume of trade" includes not only the sale of consumers' goods to final purchasers, but also all transactions in which money is paid: speculation in land or in stocks and shares, the purchase of raw material and machinery, wages and interest payments, fines and taxes. The P must be some sort of a weighted average of the "prices" of all these things. Clearly it is absurd as applied to fines and taxes, and this can be eliminated by counting, under the velocity of circulation, only payments for goods etc. The second objection is that an equation tells us nothing of the extent to which the terms are interrelated. Will a change in M produce changes in V or M^1 or V^1? If it does, the relationship between the quantity of money and the price level is very complicated, and they may not move exactly together.

Another type of so-called quantity theory is exemplified in the "Cambridge equations". This approach was

[6] Cf. Benjamin Anderson Jr.: *The Value of Money.*

adopted by Marshall, but we need only consider one example, namely Mr Keynes's equation from the *Tract on Monetary Reform.* The starting point is to consider the quantity of money which people are prepared to hold and to carry about in their pockets or to keep in a cash-box. This will depend partly upon their wealth and partly on their habits of payment. Normally, what people carry about with them is money enough to buy a certain quantity of goods, which we may call k. The higher the prices of goods, the more money would be required to buy k. Leaving banks out of account, if p be the average price of consumers' goods, then the quantity of money which people carry about will be pk.

Similarly, people keep at the bank enough money to buy, let us suppose, k' units of goods. Bank deposits then are pk'. Against these liabilities the bank keeps a certain cash reserve, which we may call rpk', where r is the reserve ratio. Let n be the total quantity of money in the pockets of the public and in the tills and vaults of the banks; then $n = pk + rpk'$

$$= p\ (k + rk').$$

Then the price level varies with $p = \dfrac{n}{k + rk'}$

From this equation it can be deduced that, provided k and rk' do not change, p varies directly and in the same proportion as n—the price level varies with the quantity of money.

Mr Keynes was concerned to show, however, that k, k' and r have often changed, and that sometimes they change because of a change in n or in p. Consequently the change in the price level which will accompany a change in the note issue cannot be easily predicted.

In any case Mr Keynes thought in 1923, and no doubt still thinks, that to regulate prices, it is better "to watch and to control the creation of credit and to let the creation of currency follow suit", and thus relegated the actual size of the note issue to a place of minor importance. Experience shows that the note issue often changes *after* a change in the price level, rather than before. If a quantity theory of money asserts that it is the quantity of cash in circulation which determines the price level, it must be false. Mr Keynes referred to his equation as the "quantity theory", but he qualified the theory to such an extent that this was already something of a misnomer, and in his later works he has definitely abandoned the "quantity theory", in favour of the "savings and investment" analysis, explained in § 2.

§ 5. *Supply of and demand for money.*

The theory expressed in the above equation is really simply an analysis of the factors determining the public's and the banks' total cash holdings, or, to use Professor Cannan's expression, the "demand for money to hold". In expounding his theory we may follow the latter writer in his use of "money" in the narrower sense, to which we apply the word "cash", although in later chapters we shall speak of the "demand for cash", where we do not include credit.[7] It should be noticed that the "demand to hold" is not the same thing as the demand for money by "each seller of goods" who, according to Mill, "is a buyer of money", and does not "consist of all the goods offered for sale". For the money received in return for the goods need not be *held* by the seller of those goods, but may be immediately spent on something else. Similarly, as

[7] See above, page 5.

Professor Cannan explains, we might think of the demand for houses in two different ways: (1) The houses which are bought at any given price—which is similar to Mill's concept of the demand for money; and (2) the houses which are held, by their present owners, at any given price—which is similar to Professor Cannan's concept of the demand for cash to hold. There is little doubt that the latter is a somewhat unusual usage of the term "demand", but provided it is not confused with the former usage by Mill, it is sometimes a convenient expository device.

Thus Professor Cannan rejects the quantity theory of money, since there is no reason to believe that money, more than anything else, varies in value (or purchasing power) in exactly opposite proportion with the quantity in existence. Like everything else, its value depends upon supply and demand. Supply he defines as the "money in circulation", not, as Mill does, as the "total money laid out". Then the supply must always be equal to the demand for money to hold, since money which is not held by somebody can hardly be said to be in circulation. An increase in the note issue, or supply of money (or, in conformity with our terminology, of "cash") will only be taken over by the public and banks if their demand for money rises accordingly. It will tend to do so if the exchange value of money falls—for demand normally expands when the exchange value falls—or if, for some reason, the people's demand for money to hold, at its existing value, increases. The extent to which an increase in the note issue leads to a rise in the general price level, i.e. to a fall in the value of money, depends upon whether the demand for money to hold is "elastic". If the demand is highly elastic, a small fall in its value leads to a large increase in cash holdings, and the

increase in supply is absorbed without much rise in the general price level. If the demand, on the other hand, is inelastic, a small increase in supply causes a great fall in the value of money, i.e. a great rise in the general price level. Again, when prices rise rapidly for some time, the demand for money to hold tends to fall, since nobody wants to hold stocks of something whose value is likely to deteriorate in the near future. Then the value of money falls even if there be no further increase in the supply.

Every student can learn something from Professor Cannan's skilful use of this supply and demand approach. As a description of the real world, however, it has one drawback. By concentrating attention upon the supply of, and demand for money, it tends to obscure the fact that, for the value of money to change, the prices of particular commodities must change. The theory expounded at the beginning of this chapter is in this respect superior.[8]

We have presented several theories of the causes of movements in price levels of consumers' goods. These theories have a good deal in common, but differ in method of approach and in the points chosen for emphasis. An acquaintance with all of them is a useful preliminary to any study of concrete problems, because at different times, and in different circumstances, different points require emphasis. For the rise in prices during the war, the quantity theory offers a simple, if inadequate, solution. For the period when prices were rising even faster than the quantity of money, Professor Cannan's approach is illuminating. But for the movements in price levels often associated with booms and depressions, Mr Keynes's analysis, and Wicksell's,

[8] Cf. Cannan: *Money*, p. 66, where, to explain why the value of *money* changes, reference is made to consumers' demand for *goods*.

of savings and investment are more useful. The reconciliation of these various theories is an academic exercise which the reader, if sufficiently interested in pure theory, may carry through for himself.

§ 6. *Foreign exchange rates and tariffs.*

The foregoing discussion ignores completely changes in the consumers' goods price level which may come through changes in international trade, except in so far as they react upon incomes, production, or the quantity of money. Clearly if exporters lose a foreign market, so that their incomes are reduced, their expenditure in the home market is likely to be diminished, and prices will tend to fall. Conversely, if exporters obtain higher prices for their exports, their own increased expenditure tends to raise prices at home. On the other hand, imports must be regarded as part of the production upon which money is spent. The rise in home prices might be checked immediately by an inflow of imported goods at prices below the new home prices. Again if exports increase by more than imports, the difference is likely to be made up by an inflow of gold. This by increasing the quantity of cash makes possible an expansion of credit and leads to a rise in prices. These reactions will receive more attention in subsequent chapters. They do not contradict our theory of price levels, but constitute a modification which may sometimes be quite important in practice.

Any measure which tends to shut out imports will *tend* to raise prices within the country, although this tendency may be offset by factors working in the opposite direction. Tariff increases tend to raise prices, not only of the imported goods upon which the import duty is levied, but of similar goods made within the

country, and of other goods whose costs of production are affected by these higher prices. A similar result follows the depreciation of a currency on the foreign exchanges. Australian exporters receive prices 25% higher, when the exchange rate is at 125, than if it were at par; and some Australian manufacturers are given a protective margin of 25% above the landed cost of imports. Thus prices of exportable goods and goods competing with imports tend to be higher than they would otherwise have been. During periods of rapid inflation, when speculation was causing great fluctuations in the exchange rates of some European currencies, the movements of price levels were more closely linked to movements in the foreign exchange rate than to changes in the note issue. This has strengthened many economists' dislike for the quantity theory; but we may point out that no considerable modifications are necessary in the theory advanced in § 1 of this chapter. The depreciation of the Australian exchange checks the importation of goods into Australia; if demand is constant, this decline in supply leads to higher prices for these goods, and probably to a rise in the general average of prices on which the index-numbers are based.

§ 7. *Oversea borrowing and lending.*

In our discussion of saving and investment we did not take into account what is called "foreign investment", nor did we consider investment financed by borrowing overseas. Both are so important in relation to the price level that we must give them special attention.

By "foreign investment" is usually meant lending to people or Governments in other countries; it does not necessarily follow that the money is actually invested

in capital equipment in the borrowing countries. Therefore "external lending" is a better term. "External borrowing" is the receipt of money on loan from abroad. In Australia we generally speak of "oversea borrowing", because the loans do come from countries across the seas. The reader will remember that the money which forms the loan is rarely sent to the borrowing country, but is usually exchanged for the appropriate sum of the latter country's money through the foreign exchange market. In the next chapter we shall see that variations in the quantity of external borrowing or lending may bring about changes in the foreign exchange rate. When this happens, external borrowing or lending may affect price levels indirectly, through the influence of exchange rates on prices, noted above. But for the moment we may ignore this possibility, important though it may be on occasion, and consider the place of external borrowing and lending in the "savings and investment" analysis.

Consider first the lending country, for example, Great Britain. External lending involves saving within the country, but no direct expenditure of these savings. Hence an increase in external lending generally tends to reduce the price level of consumers' goods, or to prevent it from rising. On the other hand, an increase in interest payments from overseas increases incomes, in the ordinary sense of the word, and unless this increase is hoarded, the prices of consumers' goods tend to rise. It may be that the fall in prices induced by external lending will be checked by the growth of demand for the country's exports, on the part of the borrowers or of others attracted by the low prices, or that the rise in prices induced by the increase in external interest receipts may be checked by a decline in demand for exported goods. But these are second-

ary effects, and the *immediate* effects of an increase in external lending and of an increase in external interest receipts are those indicated.

For the borrowing country the effects are just the reverse. Every increase in Australia's external borrowing means an increase in money incomes, unaccompanied by any increase in production, and prices tend to rise. Public works financed by overseas borrowing represent investment in excess of Australian savings, and consequently tend to raise the prices of consumers' goods in Australia. If the borrowed money is spent directly on consumers' goods the same effects may be expected. On the other hand the gradual increase in the overseas interest bill which, in the absence of reductions in interest rates, must accompany continued borrowing, or a sudden increase in interest payments, due to conversions at higher rates, tends to reduce prices in Australia, as the money in question is withdrawn by taxation from the consumer, and not paid out again through expenditure in Australia. As in the case of the lending country, there may be secondary effects which tend to offset these immediate ones. If heavy borrowings lead to a great demand for imported goods, the rise in Australian prices may be, to a greater or less extent, checked. But no general rules can be established regarding these secondary effects, and they cannot be understood without a complete knowledge of international trade, which we cannot undertake to provide in this book.

Enough has been said, however, to show that our theory is applicable to a country with external capital transactions as well as to a "closed economy", with no international contacts. The expenditure-production and savings-investment approach are decidedly more adaptable to such problems than the various forms of the quantity theory.

§ 8. *Other price levels and their dispersion.*

The theory of money has in the past been concerned chiefly with "the price level". As we saw in Chapter III, there are several important price levels, and the price level usually regarded as the most significant, is the price level of consumers' goods. This may be either the wholesale price level or the retail price level. Our discussion in this chapter so far has not explicitly distinguished between these two, but by emphasizing consumers' expenditure, our attention has been implicitly directed towards retail prices. In general retail prices are subject to less short period fluctuations than are wholesale prices, because wholesale markets provide opportunities for speculation, i.e. buying not for consumption or for sale to a consumer, but to sell again when prices rise. Thus we would not expect a close agreement between the wholesale and retail prices of consumers' goods. If this were the sole difference, however, we would expect the wholesale and retail prices to have similar trends when any short period fluctuations were smoothed out. But even for large falls in the wholesale price level, the retail price level sometimes responds but little. In this case the price levels diverge, and this relative movement is called dispersion. It is to be attributed largely to changes in the costs of marketing, and to competition being less keen among retailers than among wholesalers. But often the apparent dispersion of two index-numbers, one covering retail prices and the other wholesale prices, is due to the fact that they are based on the prices of different commodities, which do not necessarily move together. For this reason great caution is required in explaining any apparent divergence in wholesale and retail price index-numbers.

Another type of dispersion is that of consumers' goods prices and producers' goods prices. Few

countries have index-numbers of the prices of machines and similar producers' goods, but it is evident that the movements of these prices are not determined by the same immediate factors as the consumers' goods price level. Under given conditions of supply, the prices of producers' goods are likely to fall whenever the market rate of interest is above the natural rate, as defined by Wicksell. In this case there is no incentive to purchase machines, and with a weak demand, prices tend to fall. Similarly the prices of producers' goods tend to rise when the market rate of interest is below the natural rate of interest, and investment in plant appears profitable. How far the prices rise will depend, as in the case of other commodities, upon the extent to which an increased supply can be produced without costs of production rising. If there is little unemployment, it will be necessary to attract labour out of industries producing consumers' goods. If the demand for producers' goods comes from the investment of voluntary savings, the decline in consumers' demand involved in the original saving will set labour free from the consumers' goods industries, and the producers' goods industries will be able to get the necessary workmen without much increase in labour costs. But if the demand for producers' goods is financed by bank credit, demand will still be strong for the products of consumers' goods industries. The producers' goods industries will therefore have to pay higher wages to attract work-people out of other industries. Accordingly the prices of producers' goods will rise more quickly as the demand for them increases. This analysis, however, only applies if labour is so fully employed that in order to increase output, the producers' goods industries must get their labour from other industries.

In the world slump which began in 1929, the prices of producers' goods, in countries where they are recorded, did not fall as rapidly as the prices of consumers' goods. Economic theory would lead one to expect just the reverse, since the demand for consumers' goods is likely to be maintained at the expense of additions to capital equipment. The explanation, however, is to be found in the fact that many producers' goods industries are controlled by monopolies or cartels. (A cartel is an association of producers, for the purpose of controlling selling price, and rationing out the available market.) In the depression "cartellized" prices have fallen less than prices subject to free competition.

Two more price levels may be noticed, the price level of exports and the price level of imports. If the former rises more than the latter, a country gets back in exchange for its exports a larger quantity of imports, and providing there are no secondary dislocations in internal production, the national real income of goods and services is thereby increased. Part of the severity of the depression in Australia was due to the fact that the price level of her exports fell by more than the price level of her imports.

The relative movement of these two price levels depends, of course, upon the composition of exports and imports. Australia's imports consist mostly of manufactured goods and her exports mostly of rural produce. In a period of falling prices, the prices of rural produce tend to fall more quickly than the prices of manufactured goods, because production is adjusted more slowly to a decline in demand in the case of rural produce. Thus Australia's price level for exports usually falls more quickly than the price level of imports.

CHAPTER V

WHAT DETERMINES EXCHANGE RATES?

§ 1. *The problem of foreign exchange between two countries.*

The exchange rate, as we have explained in Chapter III, is the rate at which a unit of one currency exchanges for a unit of another. In other words, it is the price of one currency, for example, English £'s expressed in terms of another currency, for example, U.S. dollars. We have now to consider what causes these rates to be what they are at any given time, and what causes them to alter. Our explanation must be sufficient to cover not merely stability of exchanges, but short term movements such as day to day fluctuations and long term movements over a period of years. Moreover, our explanation must further be sufficient to apply to the exchange between two countries, both of which are on a gold standard, and to the exchange between two countries, one or both of which are on a paper standard.

Looked at in this way, the problem of foreign exchange is a problem of price, and is most conveniently examined by grouping together the influences affecting that price under the heads of supply and demand. Before proceeding to do this, however, a few general remarks on the problem may be made which apply whether countries are on or off gold. We shall

select our examples throughout from the London-New York or sterling-dollar rate, and for convenience shall assume that there are no countries or currencies other than these two. ("Sterling" is simply another name for "English currency".) It must never be forgotten that in this type of sale at a price, as in all others, no exchange will take place unless there are buyers able and willing to offer sterling for dollars, and sellers are able and willing to accept sterling for dollars. In considering the supply and demand of sterling in terms of dollars, and vice versa, we shall have to give some consideration to the question why it is that some people, either in New York or London, find themselves in a position when they wish to buy, with sterling, claims to dollars, and why it is that at the same time others in New York or London are willing to accept claims to sterling in return for dollars. It is immaterial whether we look upon the former as those who supply and the latter as those who demand sterling, or the former as those who demand and the latter as those who supply dollars. In any case we get a picture of numbers of individuals ready to make the exchange of sterling for dollars in varying quantities according to the relative price offered.

It is important to emphasize the fact that a sale of foreign exchange differs in some essentials from a sale of goods. In the latter case, within a country, when A sells goods to B at a price, the goods pass into the possession of B and the money passes into the possession of A. Even when the transaction is one of international trade, the goods leave the possession of A in A's country, and pass into the possession of B in B's country, but when A in London buys dollars from B, no money "leaves the country" (except in the case to

be considered later, where gold is sent). All that happens is that A, who has a legal claim to the possession of sterling in London, hands over that claim to B, who in turn hands over to A his legal claim to dollars in New York. Since for the most part foreign exchange transactions are carried on with the assistance of banks, what really changes hands when a purchase and sale of foreign exchange is made, is a portion of the bank deposits in each country. When, for example, A in London buys 1,000 dollars from B, and agrees to pay in sterling, the ownership of part of A's sterling deposit with his London bank is transferred to B, and the ownership of part of B's dollar deposit with his New York bank is transferred to A.

This also serves to explain what happens when there is a sudden or severe movement of short term funds from one financial centre to another, or where there is a "flight from a currency". It is well known that in the past few years there has been a mass of short term capital on the move from centre to centre, now attracted by higher rates of interest, now repelled by fears for the stability of a currency, and again attracted by the prospect of finding a safe asylum. Whenever people wish to "shift" this capital quickly, for example, from London, or to "fly from sterling", the only way in which they can do it, apart from moving gold, is to sell their claims to sterling in return for claims to whatever other currency they fancy. But this is only possible when there are buyers who hold claims to foreign currencies which they are willing to sell in return for claims to sterling, and their willingness may have to be stimulated by a fall in the price at which they are prepared to buy sterling.

§ 2. *Why do foreign exchange transactions take place?*

The reasons why at any time there are people willing to exchange sterling for dollars may be conveniently grouped under four heads.

In the first place, arising out of the normal transactions of international trade, people in both countries find themselves in the position of debtors who have payments to make to their creditors which must be made in the currency of their creditors. An Englishman, for example, who has imported raw cotton from the United States, has to pay for it, not in sterling, but in dollars. Similarly, an American who has imported manufactured textiles from England, has to pay his English creditor in sterling, not in dollars. Again, services as well as goods enter into international trade. A typical service is that of freight. If manufactured textiles are carried to the United States in English ships, someone has to provide the sterling necessary to meet the charges of the English shipping companies. Along with these goods and services we may group the payments arising from the expenses of foreign travel. Great numbers of American tourists, for example, normally visit Europe in the spring and summer and return in the autumn. The goods and services which these travellers consume whilst in England have to be paid for in sterling. The aggregate expenditure by American tourists abroad is estimated for the years 1929 and 1930 to have averaged $620 million, which was almost as large as the excess of the exports of goods from the United States over the imports of goods during those years.

In the next place, payments to and from London have to be made on account of foreign investment. Where English investors lend to American borrowers

they are undertaking to make payment in dollars to the amount of the loan, and in order to procure those dollars they offer sterling. Arising out of such transactions there is the payment of interest on the loan, and the repayment of the loan. Just as the making of the loan causes the English investor to be seeking dollars in exchange for sterling, so the payment of the interest annually or half-yearly, and the repayment of the loan itself, mean that the American borrowers are requiring sterling for this purpose, and are offering dollars. Foreign investment may be investment in long term securities, or it may be short term investment; it may be private investment in shares of companies, or it may be public investment in government loans, but in all cases, it means that individuals in one country have reasons for making payments in the currency of the other.

In the third place, individuals may be requiring sterling or dollars as the case may be, for the purpose of speculation. It may be difficult always to draw a clear line between investment and speculation, but certainly one of the reasons why people require dollars and are prepared to pay for them with sterling is that they hope to gain by a rise or fall in the exchange rate. During the period when the German mark was falling in value, one of the incalculable factors was the enormous speculative buying of marks by foreigners in the expectation that the price of the mark in terms of their own currency would recover. The fact that it did not recover, and that these foreigners lost completely the amounts of their own currency which they had exchanged for claims to marks, does not falsify the statement that the price of marks in terms of other currencies was affected by this speculative demand from foreigners.

The last group of reasons may be called non-commercial, covering such cases as inter-governmental payments arising from the war, including interest, reparations, and the return of the capital of loans; the making of gifts between friends and relatives of which the most important examples are remittances by emigrants; and charitable gifts from one country to meet the necessitous conditions of another, such as those from America to some European countries during and after the war.

§ 3. *Supply of, and demand for foreign exchange.*

As we have remarked above, the influences which affect the exchange rate may be grouped under the heads of supply and demand. If we consider numbers of people in the position of offering sterling for dollars, and vice versa, and assume that they are anxious to secure the price which will suit them best, we shall realize that, as in the case of other prices, movements in supply and demand affect the exchange rate. If, for any reason, the supply of sterling increases, so that more pounds are now offered for dollars, and there is at the same time no increase in the supply of dollars offered for sterling, then sterling will become less valuable in terms of dollars, dollars more valuable in terms of sterling, and the exchange rate will move, to use a common expression, "against London", or become more "unfavourable" to London. On the other hand, if for any reason the supply of sterling decreases, and there is no decrease in the supply of dollars offered for sterling, then sterling will become more valuable and the exchange rate will move in a direction "favourable" to London. Similarly with the demand for sterling, which is the supply of dollars. If this increases while the supply of sterling is

unchanged, the rate moves in favour of London, while if the demand decreases while the supply of sterling is unchanged, the rate moves against London.

We must beware of reading too much into these terms "favourable" and "unfavourable". When the exchange rate is unfavourable to London, it means that those who wish to buy dollars with sterling must now offer more, and those who wish to buy sterling with dollars can obtain more with the same number of dollars. But a movement in the rate which is unfavourable to the holder of sterling is favourable to the holder of dollars, and there may be members of both countries in each of these two classes. A movement in the rate unfavourable to London may not suit an English debtor who has to supply his creditor in America with dollars, but it may suit an English creditor who receives more sterling from his American debtor.

Since the exchange rate is a price, not merely do movements in supply and demand affect it, but movements in the price also have reactions both upon supply and demand. If the price of sterling in terms of dollars rises, this change induces those who hold sterling to offer more sterling for dollars at the new price than they are prepared to do at the lower price. Similarly, if the price of sterling falls, they will be inclined to offer less sterling for dollars at the new price. Corresponding effects upon the demand for sterling or the supply of dollars may be traced from movements in the exchange rate.

With this approach in mind, we may turn to a discussion of the four heads abovementioned, so as to indicate how movements in trade, investment, speculation, and non-commercial payments may affect the exchange rate.

(*a*) *Trade.*—Generally speaking, every increase in a country's imports, other things being equal, causes the exchange rate to move against that country, and every increase in exports causes the rate to move in favour of the country. When, for example, Englishmen import goods from the United States, the supply of sterling offering for dollars increases and the price of sterling tends to fall. Similarly for exports; the supply of dollars increases and the price of sterling rises. The movement of goods between England and America is affected by seasonal considerations. The greater part of the exports from the United States takes place in the autumn after the crops have been gathered, and on the other hand, the greater part of her imports moves fairly steadily throughout the year. When the exports increase in the autumn, the supply of sterling increases, because English importers have to secure with sterling the means of paying their debts to American exporters. Consequently, sterling becomes normally a little cheaper in terms of dollars during the autumn. On the other hand, when these seasonal exports fall off while the imports into the United States continue, the price of dollars decreases in terms of sterling. The same is true when American tourists visit England, because their expenditure tends to cheapen the dollar since they add to the supply of dollars offering for sterling.

(*b*) *Investment.*—When Englishmen make an investment in the United States, the effect upon the exchange rate is similar to that of an import into England. The fact of the investment means that more sterling is now being offered in exchange for dollars, and the effect will be to turn the rate against England. This fact may be obscured by the term "export of capital", often used to describe a foreign investment,

but such a loan may be regarded as an "import of securities". On the other hand, if the loan is repaid to England, or when interest payments are made to the investing country, the supply of dollars increases and the price of sterling in terms of dollars tends to rise.

(*c*) *Speculation.*—This factor may affect the exchange rate in exactly the same way as investment. When any one offers dollars for sterling with a view to selling again soon at a profit, he increases the supply of dollars and sends up the value of sterling.

(*d*) *Non-commercial payments.*—Where a government is under the political obligation to pay interest on war debt, or to repay the capital sum of a war debt, or to pay reparations to another country, the effect of honouring that obligation is to turn the exchange rate against the debtor country. For example, when the British Government was paying interest regularly on war debt and repaying capital to the United States, it meant that the British Government had to offer sterling for dollars, so that the pound became cheaper. Again, when American people subscribe to a charitable cause in Europe, or when a well-dowered American heiress marries a British nobleman, the effect is to reduce the price of dollars.

It will be convenient here to consider how movements in the exchange rate may affect demand and supply. As far as trade is concerned, the volume of exports or imports may be affected by alterations in the exchange rate. If the pound becomes cheap in terms of dollars, exports from England will tend to increase and imports to diminish. The reason for the movement is that it pays English people to sell goods in America, and with the dollar proceeds to buy sterling, rather than to sell the goods in England for sterling. But the

effect of this tendency is to increase the supply of dollars and, therefore, to bring back the exchange rate from its unfavourable position.

International investment and speculation are also affected by the exchange rate. Two factors in particular, apart from security, have to be reckoned with by the foreign investor and the speculator in foreign exchange. One is the rate of interest, the other is the prospect of changes in the exchange rate. If the rate of interest in New York, for example, rises, it offers added inducement to the British investor to select dollars rather than sterling for his investment. If the interest rates change so that £100 sterling will yield 3% in London and 3½% to New York in equally safe investment, such a fact is important enough to increase the supply of sterling offered for dollars. But this increase may not occur if investors expect a subsequent fall in the dollar. Much the same may be said of the speculator, and as we have stated above, the line between investment and speculation is not always easy to draw.

§ 4. *The purchasing power parity theory.*

The relation between the exchange rate and relative prices in the two countries may now be examined in more detail. It is clear, since the supply and demand of dollars or sterling is affected by exports and imports of goods, and since the trend of trade is greatly influenced by price differences, that relative prices in the two countries must have some effect upon the exchange rate. If, for example, the rate of exchange were $3·50 to the £ sterling, and at the same time the price of a commodity in New York were $4, and its price in London £1, it would pay English producers to export the commodity to the United States, pro-

vided that freight charges and tariff costs permitted. For if it be sold in London it fetches £1, which can buy only $3·50 in New York, but if it be sold in New York it will fetch $4. The result of the British producer's exporting to New York would be to turn the exchange rate more in favour of England, to reduce the price of the commodity in New York, and to raise its price in London. In consequence, the relative prices of this commodity in the two countries and the exchange rate would move into greater harmony. The commodity, for example, might be priced at $3·90 in New York, £1/2/- in London, and the exchange rate rise to $3·60. From facts such as these there has been developed a theory of foreign exchanges known as the purchasing power parity theory, to the effect that in the long run the exchange rate depends fundamentally upon relative prices in the two countries concerned, or the relative internal purchasing power of their currency units. Put in its crudest form, the theory may be expressed in the following way: A given basket of commodities, allowing for such things as cost of transport and tariff charges, will bring approximately the same price in every country. If this price be expressed in the currency unit of each country it will indicate the relative purchasing power of each unit. If, for example, the basket of commodities at any given time may be bought in England for £1, and in the United States for $4, then the purchasing power parity between those countries is £1 equals $4. The parity thus established is a theoretical parity, about which fluctuations great or small may occur. If the fluctuations are large they will induce movements of goods from one country to another, as we have seen above, which will tend to bring the actual rate nearer

to the parity. Although the origins of the theory have been traced back to Ricardo, it first became fashionable during and after the war when most countries had abandoned the gold standard for inconvertible paper. A distinction was made between the internal purchasing power of the currency unit and its external purchasing power. The internal purchasing power of sterling, for example, was what it could purchase at current English prices, and its external purchasing power was its value in terms of dollars. If the internal and the external purchasing power were the same, then the rate of exchange was at purchasing power parity. The two, however, might diverge, and sterling be either under-valued or over-valued on the foreign exchange market. If sterling were under-valued, this meant that its external purchasing power was less than its internal purchasing power. Correspondingly, overvaluation meant that its external purchasing power was greater than its internal purchasing power. On these lines it was sought to explain some otherwise inexplicable features of the post-war economic situation in Europe. It was often alleged, for example, that currency depreciation in Germany gave that country a great advantage over her competitors. German goods were sold in England at a price with which English manufacturers could not compete. The real trouble was that there were large and long-continued differences between the internal and the external purchasing power of the German mark. The German mark was under-valued in such a way that it could purchase much more at home than abroad. Consequently, goods which could be sold in Germany for 2,000 marks, might at the same time bring £10 in England, although the exchange rate was 250 marks to the £1. In these circumstances it paid German

producers to obtain marks, not by selling the goods in Germany when they would get 2,000 marks, but by selling them in England and transferring the proceeds to Germany, when they would bring 2,500 marks. Or the German producers could afford to offer the goods in England for as little as £8 and still receive as many marks as if they had sold them in Germany. This was obviously an advantage to the German exporter, but was equally obviously a disadvantage to the German importer.

An examination of the purchasing power parity theory reveals some difficulties. In the first place, the serious question arises, what prices are to be compared in the two countries? Two possible answers may be given to the question. First, the relevant prices are the prices of those goods only which enter into international trade. If this answer be accepted as correct, the theory becomes little more than the truism that allowing for transport and tariff costs, many commodities such as cotton, wool, and wheat have world prices. A rise in the price of one of these commodities in any one country will sooner or later be adjusted either by its falling to the world price, or by the world price rising to the new level. But there is no sharp dividing line between goods which do and goods which do not enter into international trade. Into which category a particular commodity will fall, largely depends upon relevant prices at home and abroad. Even services which may seem at first sight to be non-exportable, may be consumed by visitors. Moreover, land, the most immovable of all commodities, may, at least through foreign ownership, have its income exported abroad.

The second answer is that the relevant prices are the prices of all goods and services in each country.

In this case the theory can only be correct on the assumption that the prices of goods and services which do not enter into international trade, move always in the same direction and at the same rate as the prices of those which enter international trade.

Attempts have been made to work out purchasing power parities between two countries on one or other of these views. But instead of selecting a 'market basket of commodities and pricing it in the two countries at various times, recourse has been had to price index-numbers, already to hand, each purporting to measure changes in the purchasing power of money in a particular country. A base year is chosen, and changes in the purchasing power parity are calculated from the relative movements of the two countries' index-numbers. If we assume that, in the base year, the ruling exchange rate did approximately establish purchasing power parity, the parity for any succeeding year can, therefore, be calculated. If in 1913 an English basket of commodities brought £1, and in 1933 £2, while an American basket of commodities brought $4·866 in 1913 and $8·24 in 1933, then if the purchasing-power parity in 1913 were £1 equals $4·866, in 1933 it would be £1 equals $4·12. And even if our assumption that the exchange rate in 1913 did establish purchasing power parity were invalid, it would still be true that the purchasing power parity of the pound with the dollar had fallen in the ratio of 4·866 to 4·12.

Since wholesale price index-numbers usually refer to goods which enter largely into international trade, such as raw materials and foodstuffs, they are more suitable for such calculations if we accept the first answer, above, to the question as to which prices should be considered. And retail cost of living index-numbers, which cover more locally produced goods and

services embodied in the goods, are more appropriate if the second answer be accepted. But in neither case are the index-numbers constructed specially to represent international trade goods or all goods and services, and, as we saw in Chapter III, there is a certain danger in using an index-number for a purpose other than that for which it is intended.

Purchasing power parities calculated from price index-numbers are based upon the assumption that transport costs and tariff costs are approximately the same at the various periods considered, and the fact that this assumption cannot be accepted as a matter of course, but must be empirically tested in each period, presents an additional difficulty. Furthermore, a country whose exports rise in price as compared with the prices of its imports can, and usually will, increase the importation of goods without any decline in the foreign exchange value of its currency. Yet in these circumstances the purchasing power parity as calculated by the above method might fall. The same is true of a country which borrows heavily from abroad and allows its price level to rise. The purchasing power parity of the currency will fall, but its foreign exchange value will not.

Despite these difficulties, the purchasing power parity theory was extremely useful in the post-war chaos of international exchanges. By its means was demonstrated the fact that rapidly rising exchanges in countries like Germany were little influenced by the balance of trade, but far more by the depreciation of the currency unit as revealed by rising internal price levels. In addition: "It performed admirable service, both in showing the irrelevance of the pre-war gold parities to the existing situation, and in providing in substitution a more appropriate conception of normal

exchange rates."[1] The theory serves to call attention to the fact that movements in price fundamentally affect exchange rates through trade movements. But the theory is not so useful for practical purposes. In the first place, it cannot help in predicting the future course of the exchanges, because it is impossible to say whether a movement in the actual rate is a fluctuation about the purchasing power parity or is a movement of the parity itself. Moreover, the method of calculating the parity by means of index-numbers can give nothing more than a very rough indication of the theoretical parity of exchange. In the next place, because there are many other facts besides the prices of commodities affecting the rate of exchange, the theory is incomplete and in particular it fails to offer any adequate explanation of day to day fluctuations of exchanges.

It is possible to include what is useful and fundamental in the purchasing power parity theory in the supply and demand approach, which we have adopted earlier in this chapter. If we revert to the situation in which buyers and sellers of dollars and sterling were considered as attempting to make the best bargains for themselves, we may put it that a holder of sterling has, according to his means and his knowledge, a number of ways of using those resources. He may invest in a British security, or buy British goods and services for consumption, whether or not they enter into international trade. He may, for example, buy wheat, or coal, a country estate, or an interest in British railways. Whatever he does he will be guided by relative prices and returns. Similarly in regard to commodities owned in the United States. The holder of sterling may by the process of turning sterling into

[1] Whale: *International Trade*, pp. 47-8.

dollars, buy American securities, American goods or even American landed property. He may become the owner of American steel, an American motor car, or even a holiday resort in the Adirondacks. It is true that some of these may, and others may not, be transported to England. Nevertheless, his choice will finally depend upon relative prices of various goods and services in England and America. The exercise of his choice will determine whether or not he will offer his sterling for dollars, and if so, at what rate. If we consider holders of American dollars exercising similar choices in regard to locally-owned commodities and to foreign-owned commodities, we may realize the importance of price movements in relation to exchange. It goes far beyond the prices of goods which normally enter into international trade. A movement in the price of wheat or of a foreign security, or even of foreign landed property, may have its effect upon the supply of sterling offered for dollars. It has been said that "Not all prices influence the purchasing power parity; no fall in the cost of houses in the United States, however large it might be, would induce people in Great Britain to buy their houses from America."[2] But such a fall might just be the factor which determines the British investor to invest in this form of property, not necessarily, of course, for his personal use, rather than in British property. This is illustrated by the fact that a good deal of property in European countries was acquired by foreign investors after the war, who found the exchange rate favourable to their purposes. On a comparison of the relative return on a sterling investment, and on one obtained by selling sterling for marks, the latter proved the more lucrative.

[2] Vallance in Cole: *What Everybody Wants to Know About Money*, 1933, p. 246.

This action, too, undoubtedly affected the exchange rate by increasing the supply of sterling for marks.

It is not suggested that this is the only factor which affects the exchange rate, but it falls naturally into its place as one which can be considered under the supply and demand for dollars in terms of sterling. This way of looking at the matter, too, overcomes the difficulty of deciding as to which set of prices, those of international goods or those of internal goods, is relevant to the problem.

§ 5. *The problem of foreign exchange between several countries.*

It will now be convenient to remove the assumption that we are concerned only with two countries and two currency units. The removal of this assumption, which was adopted purely for convenience of exposition, makes little difference to the explanation of what causes the exchange rate to move or to remain stable. In the real world of exchange, matters are much more complicated, but the factors of demand and supply are still fundamental. Trade relations, including exports and imports, are much more complex, and the choice for the foreign investor and speculator is much wider.

We have considered goods moving merely between the two countries, England and America. It is important, however, to recognize what is sometimes called "triangular trade", leading to corresponding payments. Australian wool, for example, is exported to Japan, but, instead of corresponding exports from Japan to Australia, silk is exported to England, and machinery is exported from England to Australia. In effect, Australian wool pays for the English machinery, the Japanese silk for the Australian wool, and the

English machinery for the Japanese silk. In each case the exchange rates between these three countries are affected by these movements, and it must also be remembered that this figure may not be a triangle, but may have many sides.

But the reasons which induce people to offer amounts of one currency for units of another remain the same. The removal of the assumption enables us to complete our explanation of exchange by referring briefly to the two problems of arbitrage and forward exchange. Both these matters are in practice highly technical, but for our purpose it is only necessary to consider them in outline. The principle of arbitrage is that dealers in foreign exchange are able and willing to take advantage of small disparities in actually quoted exchange rates. They seek a profit in buying and selling currencies, and the result of their action is to prevent disparities from establishing themselves, or to equalize rates throughout the world. For purposes of illustration we may select disparities which are very much wider than anything found in the real world of exchange. If, for example, at the same time quotations show that £100 equals $400, equals 2,000 marks, equals £101, it would clearly pay a dealer to convert sterling into dollars, dollars into marks, and marks back into sterling, because in that way he would gain £1 for every £100 used. In practice there would never be anything like such a large margin between the respective prices of these currencies, especially nowadays when all the important centres are in close and continual communication with one another. "For example, suppose that Swiss francs are wanted on the foreign market, a foreign operator might despatch orders to several centres . . . to purchase Swiss francs at a limit. The effect of numberless

buying and selling orders of this description in different countries and at different times, would be to keep the different currencies in the same ratio to each other. In other words, to stabilize the rates of each, for they would tend to move together."[3]

Forward exchange is a method of shifting the risk of wide fluctuations in exchange rates from the shoulders of merchants to those of dealers in foreign exchange. Even before the war, when fluctuations in exchange rates were confined to narrow limits, dealings in forward exchange took place. The foreign merchant who had bought goods in the United States and had to make payment in three months' time, might go to a bank and buy forward exchange, that is, contract now for the future delivery of dollars at a rate agreed upon, however rates might have altered by the time that he received the dollars. The bank or other expert dealer in forward exchange would take the risk, and would attempt to regulate its sales and purchases of forward exchange and its rates, so that it stood to make a profit out of these transactions, in return for its expert function of risk taking. The result of these dealings was to spread over a longer period of time the buying and selling of exchange. This would tend to prevent a sudden rush of demand for claims to money of other countries, and a sudden rise in their price or a sudden rush of supply of such claims and a fall in their price. Since the war the risk of large fluctuations in foreign exchange has led to a great development in forward exchange. As in the case of other speculative purchases and sales, provided they are carried out expertly, the tendency of the practice is to steady the rate of exchange and to minimize fluctuations.

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[3] Miller: *The Foreign Exchange Market*, p. 115.

§ 6. *Monetary policy and stability of foreign exchange.*

The effects of great instability either of price levels or of exchanges are such that it is common to find monetary policy directed to securing stability of one or both. Opinions differ as to whether stability of price levels is worth achieving. There is little to be said for great instability, but if in any country price levels were never to alter, there might still be transfers of income between classes. If for any reason a greater expenditure of labour and capital is required to produce commodities and services in general, and price levels are kept stable, the community as a whole is getting less goods and services per unit of labour and capital expended, but some classes such as the inactive investor still receive the same goods and services for their nominal income. On the other hand, if by inventions and other means, a less expenditure of labour and capital is required to produce commodities and services in general, and price levels are kept stable, these classes of people do not share in the improvement.

Again, there is little to be said for great instability of exchange, but how far stability will appear as an important advantage to any country will depend upon its economic circumstances. If a country has a great internal trade and a relatively small foreign trade, and its inhabitants have neither borrowed nor lent much abroad, the importance of a stable exchange with other countries will not appear as great as in the case of a country with a large foreign trade whose inhabitants have borrowed or lent freely abroad. In each case exchange stability may add to the efficiency and prosperity of importers, exporters and those who invest abroad, but where these classes form a negligible part of the whole community, stability of exchange may offer little advantage, especially if something has

to be sacrificed in order to obtain it. A country which is not on a gold standard may in practice have to exercise a choice between stability of price levels and stability of exchange as the objective of its monetary policy, for if it chooses one, it may be impossible at the same time to secure the other.

If the country wishes to maintain exchange stability, it must select one country or a group of countries for the purpose, for it cannot hope to have exchange stability with all. Having chosen the currency or currencies to which it proposes to keep its own unit equal in value, it must be prepared, if necessary, to allow its own price levels to alter. It is not that price levels are all-important factors in determining exchange, but, if they can be controlled, this facilitates the achievement of stability of exchange with the country chosen. If the other country's price level rises, then, other things being equal, some rise of prices will be necessary in the country which desires exchange stability; if the latter decides to borrow more abroad, its price level will probably rise more than that of the other country. If the country chooses stability of its own price level as its goal, then it must be prepared to let its exchange rates with other countries fluctuate if necessary. Only in the case where other countries are following a similar price policy can it be expected that any stability of exchange will result.

CHAPTER VI

THE PRE-WAR GOLD STANDARD

§ 1. *The gold standard and foreign exchange.*

Any reader of the literature on money will notice the great difficulty which writers have encountered in endeavouring to phrase a definition of the gold standard which is at once exhaustive and informative. "The facts of life", writes Mr D. H. Robertson, "have escaped out of the pigeon-holes of the makers of text-books." His own definition is formally perfect: "a state of affairs in which a country keeps the value of its monetary unit and the value of a defined weight of gold at an equality with one another".[1] But this conveys little to an uninformed reader, until he has studied the means by which this equality is maintained. We suggest that our own readers might turn back to this definition, when they have finished the chapter.

The concept of a gold standard would be quite clear in the case of a country whose sole form of money was gold coins; here the monetary unit would be a defined weight of gold. Similarly, if the money consisted only of silver coins, the country in question would be "on" a silver standard. A country might have two standards, gold and silver, where gold and silver coins circulated, and their relative values depended solely upon the relative values of the metals contained in the

[1] *Money*, p. 64 (1930 edition).

coins. Another standard is a bi-metallic standard, where the relative values of gold and silver coins are fixed by law. These concepts do not require elaboration. But to explain a gold standard where there are token coins, paper money, and bank credit in addition to, or even instead of gold coins, demands several pages.

The gold standard may be viewed from two angles; on the one hand the conditions necessary for its existence, and on the other the consequences which its existence involves. It is more convenient to treat the latter first. We have already considered the general causes of changes in price levels and in foreign exchange rates, and may now show the implications of the gold standard for both of these problems.

"The primary object of the international gold standard", according to the MacMillan Committee, "is to maintain a parity of the foreign exchanges within narrow limits."[2] It is not difficult to see why this is, in fact, one of its consequences, whatever be its purpose. Before the war the chief countries of the world had adopted the gold standard. The English sovereign, for example, contained 113·1 grains of pure gold and 10·17 grains of alloy to harden it. Similarly the American "golden eagle" (not to be confused with Mr Roosevelt's blue eagle) or $10 piece contained 258 grains of gold ($^9/_{10}$ fine) or 232·2 grains of pure gold. A sovereign, therefore, was equal, in weight of pure gold, to $4·866. Similarly a sovereign was equal, in weight of pure gold, to 20·43 German gold marks, or 25·225 French gold francs. And paper money had the same value as the gold coins in which it was payable.

Between countries whose currencies were thus linked

[2] Cmd. 3,897, of 1931, p. 19.

to the gold standard the rate of exchange was subject only to fluctuations within small limits. For example, before the war, the actual rate of exchange between England and the United States of America did not move far away from £1 = $4·866. If, owing to any of the factors discussed in Chapter V the value of dollars tended to rise so high that much less than $4·866 could be bought for £1, it would be worth while buying gold in England, instead of buying dollars, and shipping the gold to America, where £1 worth of gold would sell for $4·866. The exchange value of the dollar could only rise to the point at which the advantage of shipping gold outweighed the cost of transport and insurance. If the journey were very expensive, when worked out on the basis of what it cost to send over £1 worth of gold, then the dollar could rise considerably before it would pay to ship gold to America rather than to buy dollars. The cheaper the transport and insurance, the less the dollar could rise without its becoming more profitable to send gold than to buy dollars. Similarly, if the dollar fell to the point at which it would be cheaper to send gold to England than to buy pounds, this course would be adopted and the dollar would not fall any further in terms of sterling. The rates above and below gold parity (£1 = $4·866) at which it becomes profitable to convert notes into gold, and to export gold from one country to another instead of buying foreign exchange, are called the *gold points*.[3] The exchange rate at which gold flows into Great Britain under a free gold standard is called the import gold point, and the exchange rate at which gold flows out is called the export gold point. Clearly,

[3] Gold parity is sometimes called mint parity or mint par; and the gold points are sometimes referred to as the specie points.

Great Britain's import gold point is the United States' export gold point, and vice versa.

What factors determine the distance of the gold point above and below parity as between two countries? The costs involved may be expected to vary from country to country. Once the gold has been bought, the first cost is packing. Then come freight, insurance, interest on the money during the journey, and charges and commissions on arrival. Not only do these vary from country to country, but they may change from time to time. Thus no pair of gold points is rigidly fixed. The export gold point for sterling in terms of dollars in recent years when both were on gold was approximately \$4·895 and the import gold point, \$4·85. That is, the British import gold point was about \$0·028 above gold parity, while the export gold point was about \$0·017 below gold parity. This means that the cost of exporting gold to New York was lower than the cost of bringing an equivalent amount to London from America. Thus the dollar exchange in terms of sterling could fall further below gold parity than it could rise above it. In the case of the post-war gold franc, the gold parity with the £1 sterling was £1 = 124·21 francs. That is a £1 note could be converted at the bank of issue into as much gold as could 124·21 francs. The gold points were approximately 123·90 and 124·56 francs to the £1. The British import gold point therefore was 0·35 francs above gold parity and the export gold point 0·31 below.[4]

Thus the rates of foreign exchange under the gold standard can vary only within narrow limits, and *adherence* to the gold standard is a guarantee against violent exchange fluctuations. From this point of view

[4] For a detailed account of the factors determining the gold points, see Miller: *The Foreign Exchange Market*, Ch. VII.

the gold standard encourages international trade by removing the danger of losses through movements of the foreign exchanges.

§ 2. *The gold standard and price levels.*

Where a group of countries possessed a gold standard, and took the steps which we shall shortly see are necessary to maintain such a standard, their price levels remained fairly stable in relation to each other. Any considerable rise in the English price level, relatively to foreign price levels, unless offset by other factors such as capital movements, tended to produce a fall in the exchange and an export of gold. This meant that either the public had less cash or the banks; both would involve a decline in demand, and tend to check the rise in prices, and at the same time, the complementary inflow of gold into other countries would raise their price levels. Thus the English and other price levels were brought into correspondence again. It should not be thought, however, that the correspondence was exact, and that the level of prices in every country was exactly the same. All that is meant is that the price levels moved fairly closely together. In this sense, then, the pre-war gold standard gave some stability of prices over space. But it would be incorrect to imagine that over time the pre-war gold standard gave much stability of price levels. Although prices in one gold standard country were not likely to move much independently of prices in other gold standard countries, prices in all these countries could rise or fall together; inversely with the value of gold as compared with other things. From 1872 to 1886, wholesale prices in England, United States, and Germany fell by between 30% and 40%; the fall was checked in the next

few years but then fell again until 1896 to a level about 45% below 1872. Thereafter prices rose so that about half the lost ground had been recovered by 1914. That is, in the earlier period the value of gold in terms of other things was rising, and in the second period, falling. This might be due either to differences in the movements of the demand for gold and for goods, or of the supply of gold and of goods. Attention has been directed particularly to movements in the supply of gold. The world's gold stocks had steadily increased up to 1914 (although gold production has slowed down since), but the available statistics show a less rapid increase in the earlier period.

Two interesting studies of gold production have been made in recent years. Professor Cassel found that English prices in 1910 were at about the same level as in 1850, and that the total increase in the world's gold stocks, if averaged out over the period, represented a growth of 2·8% per annum. Allowing 0·2% for wastage, he assumed therefore that an average increase of 3% per annum had been necessary to keep prices stable so far as monetary influences were concerned. He then worked out what he called the "normal rate of increase" in the world's gold stocks, and calculated how far the actual rate of increase diverged from this normal rate. In general, long period changes in prices were associated with the divergencies of actual gold production from the hypothetical calculated trend. A more exact correlation was obtained by Mr Joseph Kitchin, by considering not changes in the total world stocks of gold, but changes in the gold available for monetary purposes. To arrive at this, a considerable deduction from each year's production is necessary, for industrial purposes

and for export to the Far East, where precious metals have long been hoarded in large quantities. Mr Kitchin assumed a normal rate of increase of 3·1%, in the world's *monetary* stocks, and obtained a closer agreement between prices and the divergence of the actual rate from this normal rate than could be had from Professor Cassel's figures.[5]

It must be emphasized that the agreement referred only to very long period changes. Over periods of a few years, the credit based ultimately upon gold is liable to such fluctuations, and the monetary requirements of the community vary so much with economic conditions, that no correlation could be expected between prices and gold stocks.

Undue importance for modern conditions should not be attached to these conclusions. As we shall see in a later chapter the post-war gold standard differs in some important particulars from the pre-war gold standard which we are at present considering.

§ 3. *How the pre-war gold standard was maintained.*

Broadly speaking the pre-war gold standard in England, for example, required for its successful working, freedom on the part of individuals to deal with gold in their own interests, and action on the part of the central bank to make this freedom real, and to keep the international value of the pound stable.

In the first place, in pre-war England, people were allowed to deal with gold as they pleased. Gold pieces were in circulation, as well as bank notes and token coins of silver or copper. In exchange for these notes or token coins any one could get gold if necessary at the Bank of England. Moreover any one who held gold bullion could always take it to the Mint in

[5] League of Nations Gold Delegation Interim Report (1930), p. 79.

unlimited quantities and, after paying a small charge, get in return gold coins. Any one was free to export or import gold, in the form of bullion or otherwise, or to melt coins down to bullion. The effect of all these freedoms was that the price of gold bullion could not vary in terms of pounds, because if the price did go up, people would quickly melt down sovereigns and sell them as bullion. If the price of gold bullion fell, people would buy bullion, take it to the Mint, and have it coined into a larger sum than they had paid for it. In the former case their attempts to sell bullion would keep the price down, and in the second, their attempts to buy it would keep the price up.

In the next place the Bank of England had to possess a stock of gold and had to be prepared to take action to meet either a drain of gold to other countries or an influx of gold from them. The first requisite was the possession of a stock of gold. Just as an ordinary bank must hold some of its assets in the form of cash, in order to be able to cash any cheques which may be presented for payment, so too a central bank if it be required to give gold for notes on demand, must have a reserve of gold. Clearly, then, if the foreign exchange rate moved to the export gold point, and stayed there long enough, the central bank might lose *all* its gold, and be forced to suspend gold payments because the central bank had no more gold. In practice a country would not wait for this to happen, but might abandon the gold standard while it still had a considerable stock of gold in its vaults. In most countries the central bank is required by law to keep a certain proportion of gold to its note issue—the so-called gold backing of a paper currency—so that once its gold stock falls to the minimum prescribed for the existing note issue, any further loss of gold requires a reduction

in the note issue. To get the note issue down, people must be induced to hold less notes, and as we have seen, this is likely only if money incomes and prices are reduced. To achieve this the central bank must initiate a credit contraction. When this would involve ruthless deflation on so large a scale that the country dare not attempt it, the gold standard is abandoned. Or if, as during the war, a Government adopts a policy of public expenditure which requires a considerable increase in the note issue, it is usually regarded as necessary to prohibit the export of gold so as to keep as large a gold backing to the currency as possible. The belief that the "soundness" of a note issue depends upon the extent to which it is backed by gold, is quite an absurd one. If the export of gold be prohibited, the gold in the vaults of the central bank can fulfil no purpose except to convince the credulous that the currency is sound. But the belief that the note issue should have a considerable backing of gold has led some countries to abandon gold when this gold backing fell to a figure regarded as dangerously low, and further withdrawals appeared imminent.

To operate the gold standard, then, a country must have a stock of gold, and further, must avoid such heavy withdrawals as would reduce its gold reserve below the figure which is considered necessary. Opinion as to how low the gold reserve may be allowed to fall may change under the pressure of events. In Australia the legal gold reserve was reduced during the depression from 25% to 15%, although it was provided that the former percentage should be restored by degrees. Given a figure below which the gold reserve is not to be allowed to fall, the maintenance of the gold standard requires the checking of any considerable and continued export of gold once the gold reserve approaches

the agreed minimum. An export of gold can only be checked, apart from the prohibition of gold exports which involves abandoning the gold standard, by producing a movement of the foreign exchange rate from the export gold point, towards the import gold point. This can be achieved only by encouraging the purchase of the currency in question by foreign buyers, and by discouraging the purchase of foreign currencies. There are three ways of doing this, which may be observed in practice:

(*a*) It may be done by borrowing abroad, and using the proceeds to buy the currency in question. Thus, in 1931, by borrowing francs and buying sterling with them, the British Government succeeded, for a time, in checking an export of gold. If the Government could have borrowed enough, it might have bid up the value of the pound towards gold parity; but there are obvious limits to borrowing for such a purpose.

(*b*) It may be done by limiting the sums of foreign currencies which citizens may buy. A government can thus reduce the demand for foreign currencies and so check a fall in the foreign exchange value of its own money. This method has been long used in Russia and more recently has been used in other countries. Even travellers have been forbidden to carry out of a country more than a certain quantity of money.

(*c*) But the above two methods are emergency measures. The orthodox method of checking a continued drain of gold or a decline in a currency's value on the foreign exchange market was by a credit contraction, initiated as a rule by raising the rate of interest at which the central bank would lend money. In England this meant raising the Bank rate, or the minimum rate at which the Bank of England will

discount first-class bills of exchange, such as Treasury bills. In the words of the Cunliffe Committee, which considered British monetary policy just before the end of the war, "the raising of the Bank's discount rate and the steps taken to make it effective in the market necessarily led (under the pre-war gold standard) to a general rise of interest rates and a restriction of credit. New enterprises were therefore postponed, and the demand for constructional materials and other capital goods was lessened. The consequent slackening of employment also diminished the demand for consumable goods, while holders of stocks of commodities carried largely with borrowed money, being confronted with an increase of interest charges, if not with actual difficulty of renewing loans, and with the prospect of falling prices, tended to press their goods on a weak market. The result was a decline in general prices in the home market which, by checking imports and stimulating exports, corrected the adverse trade balance."[6]

This emphasis on the trade balance is misleading, since, as we saw in Chapter V, capital movements may cause the exchanges to move against a country even though its commodity exports are in excess of its imports. But the point is that the decline in imports does usually involve a smaller demand for foreign currencies, and the increase in exports usually involves a greater demand for sterling. Consequently the foreign exchange value of sterling tends to rise—above the export gold point.

It will be noticed that the Cunliffe Committee expressly stated that the movement of the exchanges was achieved by forcing down the level of prices within

[6] Report as reprinted in Gregory: *British Banking Statutes and Reports*, ii, p. 336.

the country, by a *contraction of employment* and forced sales of stocks. Great Britain left the gold standard in 1931, because the application of this remedy would have involved a far greater contraction of employment than the nation could be brought to face at a time when unemployment was already very severe. Failing this, either gold must be allowed to flow out, or the gold standard must be abandoned. But in different circumstances, where the contraction of employment required might be a small one, and when there were few unemployed to start with, this remedy could be and was employed to check a drain of gold.

On the other hand, if the rate of exchange were to move beyond the gold import point, the Bank of England was prepared to take corresponding action. The orthodox way of meeting such a position was through a credit expansion encouraged by lowering the Bank rate. Other rates of interest, at least in pre-war times, tended to follow the Bank rate with the result that borrowing was encouraged, expenditure expanded, and prices tended to rise. England became a good place in which to sell, and a less attractive place in which to buy. Exports, therefore, tended to decrease and imports to increase. A greater demand for foreign currencies and a less demand for sterling occurred. Consequently the foreign exchange value of sterling tended to fall below the import gold point. It should be noticed in passing that the degree of credit expansion or contraction which is necessary to keep a country on the gold standard under given conditions depends partly upon the policy followed by other gold standard countries. If one country loses gold, others must be importing gold; and if the gold importing countries expand credit, a smaller credit contraction

will be required in the gold exporting country. Unless credit contraction in one country is offset by credit expansion in others, there will be a tendency for world prices to fall. Conversely if a gold importing country expands credit, while a country losing gold does not contract credit, there is on balance a *net* expansion of credit which will tend to raise world prices.

§ 4. *"Rules" of the gold standard.*

In spite of the fact that the gold standard gave stability of foreign exchange and some stability of price levels, it has often been abandoned. As this book is being written, most countries of the world are off the gold standard and as yet show little signs of returning to it. Similarly, during the world war and for some time afterwards, many countries left the gold standard but later returned to it in a somewhat modified form. It is clear from these facts that the advantages expected to flow from the possession of a gold standard, and the conditions necessary for its operation, are very different things.

We may sum up our earlier discussion by remarking that the pre-war gold standard required the observance of certain "rules" which made its working possible.

1.—Individuals were to be allowed to deal with gold as with any other commodity.

2.—Steps were taken to contract or to expand bank credit in order to maintain the international value of the currency—expanding credit to meet an influx of gold, and contracting credit to meet a drain. The movement in the rate of exchange in each case was the automatic guide to the appropriate action.

It was only when these "rules" were strictly observed

that the pre-war gold standard could be said to work effectively and to give stability of exchanges and a comparatively stable price level. The recognition of these rules in England only came gradually, after a process of trial and error, and long and bitter controversies in which many of the modern theories of money were developed. A summary account of the development of the pre-war gold standard will serve to make clearer the nature and importance of the "rules" of the gold standard.

§ 5. *Development of the gold standard in England.*

Before the French Revolution the English currency consisted of gold and silver coins, Bank of England notes, and the notes of country banks. These notes were convertible into cash, i.e. gold or silver. The two metals enjoyed equal status in theory, as unlimited legal tender in full weight coins, but in practice gold had become the standard, for the only silver coins in circulation were light, or counterfeit, or foreign pieces, and served as token money. From 1774 silver coins were legal tender only for payments of up to £5. For larger payments silver "could only be tendered by weight at 5s. 2d. an ounce".[7] So the notes of the banks were really convertible into gold alone.

The war with France led, especially after 1794, to heavy expenditure and Government deficits. Prices rose by 33% in the four years after 1792, according to Jevons's index-number. The war also required payments to be made overseas, and in 1795 a loan of some £4·5 million was made to Austria, England's ally. The exchanges became adverse, and gold was exported at such a rate that the Bank of England's gold holdings fell from £6·5 million in February, 1792, to £1·1 million

[7] Feavearyear: *The Pound Sterling*, p. 160.

in August, 1797. In the course of that year, an Order in Council, and then an Act made the Bank's notes inconvertible by forbidding cash payments by the Bank. This temporary expedient lasted until 1821.

The war continued, except for a brief pause in 1802-3, and so did the Government's deficits. As the Government continually sought loans from the Bank of England, the note issue was expanded. In 1792 it had been £11 million. By 1809 it had risen to £19 million. According to Jevons's index, prices had risen from 93 to 161. Since the Bank no longer gave gold for notes at a fixed price, the market price of gold could vary freely. The demand for gold for export was so strong that the price—in Bank of England notes—rose from 77/6 per oz. ($^{11}/_{12}$) fine in 1792 to 90/- per oz. in 1809. Since gold could not be had from the Bank, it could only be bought in the market, and the price could rise indefinitely without the automatic check given by convertibility. In 1809 Parliament appointed a Select Committee to enquire into the cause of the high price of bullion. The report of the Committee is known as the Bullion Report, and it adopted the general theory of gold movements which is now usually referred to as Ricardo's theory. The Committee decided that the export of gold was due to its low value in England, in terms of goods, that is, to high commodity prices in England, which were due in turn to an over-issue of paper money. A metallic currency would be self-correcting in that as gold flowed out, the quantity of money would fall and with it the price level. (The Committee believed in the quantity theory of money.) Similarly a convertible paper currency would be self-correcting, but so long as the paper currency was not convertible into gold, the extent of its issue depended merely upon the judgment

of the Bank. This had led to an unwarranted increase in the note issue. The regulation of the issue should not be left to the Bank's discretion, for the problem would be too complicated: "it is vain to think that any rules can be advised for the exercise of such a discretion". The Committee therefore recommended that gold payments be resumed as soon as possible, and thought that it would be quite practicable to render the notes convertible in about two years' time.

The Governor and Deputy Governor of the Bank of England had expounded very different views to the Committee, similar to those still held in 1840 by the so-called "banking school". So long as the Bank made loans only for purposes of trade and on good security, said they, there could not be an over-issue of paper currency, since the notes were only issued to the extent that the public required for the purposes of trade.

The Report was not immediately acted upon, and the directors of the Bank showed that they had not yet been converted to the views of the Bullion Committee, by allowing a further increase in the note issue, which was accompanied by a further depreciation of the pound in relation to foreign currencies. Nor was Parliament convinced, for after a debate in 1811, the House of Commons rejected a motion to give effect to the Committee's proposals. The end of the war was followed, in 1815, by a financial crisis, and between 1814 and 1817 no less than eighty-nine country banks closed their doors. The depression brought a decline in the note issue, but Government deficits led to further borrowing from the Bank in 1817, a new increase in the note issue, further exchange depreciation, and a renewed rise in commodity prices. Another Committee reported, and finally, in 1819, an Act was

passed, by which a gradual return to the gold standard was to be accomplished. The Government was to repay £10 million of what it had borrowed from the Bank. From the discussion in earlier chapters the reader will notice that this repayment involved a credit contraction, unless the Bank lent out a similar amount to private traders. The deflation was accomplished, commodity prices, as measured by Jevons's index-number, fell from 135 in 1818 to 94 in 1821, and the pound rose in value on the foreign exchanges. Gold accordingly was imported, and as early as 1821 the Bank decided that its gold reserve was high enough to resume cash payments, and its notes were made convertible again, specifically into gold. Silver was formally displaced as a standard.

Thus England returned to the gold standard, which had virtually operated before the war, and it was generally accepted as the best guarantee against further inflation. But the "rules" of the gold standard had not yet won recognition by the Bank of England, although the quantity theory of money, and the theory of gold movements adopted by the Bullion Report, were now generally held in parliamentary circles. In 1819 the Court of Directors of the Bank of England could not "refrain from adverting to an opinion, strongly insisted on by some, that the Bank has only to reduce its issues (of paper money) to obtain a favourable turn in the exchanges, and a consequent influx of the precious metals", and conceived it to be its duty to declare it "was unable to discover any solid foundation for such a sentiment". Not only did the Bank refuse to accept this theory, but it was not yet in a position to control effectively the total volume of credit in the country. There was a multiplicity of other banks, and although they treated the Bank

of England as a central bank in that they largely used Bank of England notes as their own cash reserve, they were nevertheless its competitors. They issued their own notes, without any considerable public control. Moreover, at that stage the Bank of England (like the Australian Commonwealth Bank to-day) engaged in the operations of an ordinary commercial bank, and charged about the same rate of interest to its borrowers as the other banks did. To-day the "Bank rate" is usually a little above the "market rate", and the Bank only enters the open money market, in order to secure a contraction or an expansion of other banks' credit which the Bank's general monetary policy might require. At the return to gold in 1821, the Bank was far less a central bank, and far more a profit making institution than it is to-day.

Another difficulty arose from the usury laws. The medieval Church had condemned the taking of interest on loans, although it allowed a man to share in the profits of enterprise undertaken with his capital. Luther attacked "usury" without distinction, while Calvin taught that interest might be charged, except when it was unfair, or uncharitable. Henry VIII followed Calvin rather than Luther, and made the taking of interest no longer an offence, provided the rate did not exceed 10%. The opposition to usury appeared, however, in subsequent revisions of the maximum legal rate of interest and by 1713 it had been reduced to 5%. Throughout the eighteenth century, the market rate seldom rose so high, but at the beginning of the nineteenth century the Bullion Report pointed out that the rate of commercial profit had recently been much above 5%, especially in some branches of foreign trade. The demand for bank loans, therefore, even on good security, was liable to be so

great that its satisfaction involved a considerable expansion of credit. We saw (Chapters II and IV) that the interest rate must be raised to warn off borrowers if a credit expansion is to be checked, but the Bank of England could not yet use this method. It could even happen that the Bank of England would be lending at a *lower* rate than the other banks. For the latter had no scruples about asking 5% plus a commission, thus obeying the letter of the law, while securing a rate somewhat above the legal maximum. But the Bank refrained from such practices, and did not lend at more than 5%.

Soon after the return to gold in 1821, the Bank began again to lend freely to the public, since the deflation had brought in enough gold to make its position apparently safe. Trade had been very depressed in the early twenties, and the market rate of interest had fallen. The recovery of prices which followed the Bank's policy of easier credit, coupled with the lower rates of interest, encouraged speculation, and a strong boom developed by 1824. The value of the pound on the foreign exchanges began to fall, and gold was exported. But the Bank made no attempt to check the growth of credit, and allowed its note issue to increase until towards the end of 1825. The other banks were lending quite as freely, until the Bank began to refuse to discount any more bills or to make further advances. As this became known, there were runs on country banks, and a general panic. After ten days of inactivity, apart from consultation with the Government, the Bank increased its note issue again, lending to the other banks, until confidence was restored.

This experience suggested once again that uncontrolled expansion of credit causes a rise in prices, a fall in the value of the pound on the foreign

exchanges, and a loss of gold. The boom and the panic were worse because the Bank did not check credit sooner. But once the panic came, it was only an expansion of the note issue that saved the situation. The Directors of the Bank seemed to have learned something, for in 1827 they rescinded the motion of 1819 referred to above, which denied the truth of the quantity theory, and by 1832 one of the directors was able to say "of the opinion that the Bank should conduct itself in its issues with reference to the state of the foreign exchanges" that he did not think anybody in the Bank of England would deny its validity.

In 1832 Parliament appointed a Committee to consider the renewal of the Bank's Charter which would expire a year later, and Palmer, the new Governor of the Bank, recommended that it should normally lend only by the purchase of long dated securities and Government stock, and not compete with the other banks for ordinary discounting business. It should be prepared to discount bills, but only at a rate somewhat higher than the other banks. Then in time of emergency (such as 1825) it could make available additional credit.

The main outcome of this was that in 1833 the Usury Law was suspended as regards bills of exchange or promissory notes payable within three months. Thus the Bank could raise the rate at which it would make available additional credit, if it thought that the extra credit was not really required to prevent a panic. The Usury Law was not repealed in its entirety until twenty years later. Another step taken in 1833 was to allow other banks operating in London or within 65 miles of London to issue only notes payable on demand or in less than six months.

In 1836 the Bank stopped a drain of gold by raising

the rate to 5%. Gold flowed into England again, so the Bank rate was reduced to 4% early in 1838. Prices rose and gold again began to be exported, but the Bank kept its rate down at 4% despite the rising prices and the drain of gold; until the drain of gold became too rapid. Then in 1839 the Bank rate was raised by stages over three months to 6%, without avail; the Bank had acted too late and too gradually. Small banks were failing, and the Bank had recourse to the emergency measure noticed on page 137, and borrowed £2,000,000 from the Bank of France. Thus the drain of gold was checked.

In 1840 came the famous Inquiry, in which the "Currency School" and the "Banking School" of monetary reformers opposed one another. The Currency School wanted to force the Bank to make the note issue behave like a metallic currency, that is, to reduce its note issue whenever gold left the country, and would have preferred that the note issue be backed, pound for pound, by gold. The Banking School made a plea for an elastic note issue, claiming that it should be allowed to vary with the need for money for purposes of trade. The Act of 1844 gave a fairly complete victory to the Currency School. There was not enough gold to give a pound for pound backing to the existing note issue, so it was decided that the note issue would include £14,000,000 of fiduciary notes, not backed by gold, but by Government securities, and that all other notes above this sum were to be backed pound for pound by gold. To facilitate the handling of the note issue the Bank of England was divided into two departments, the Note Issue Department to control the note issue, and the Banking Department to carry on the business of lending to Governments, and to other borrowers. Certain restrictions were

placed upon other banks as regards note issues, to encourage them to give up issuing notes, and the Bank of England was to be allowed to replace notes retired by other banks, up to two-thirds of their value. Thus the Bank of England gradually acquired a monopoly of the note issue in England and Wales, and its fiduciary issue had been extended to £18,450,000 by 1914. The Bank could reduce its fiduciary issue, but not increase it above the limit set by the Act. This meant that if people converted notes into gold, at the Bank, those notes were not to be re-issued, except in exchange for gold. Thus the note issue would be regulated automatically.

The Governor of the Bank, Palmer, pointed out to Sir Robert Peel that this legislation would make it impossible for the Bank to lend assistance by increasing its advances and note issues in time of panic; but the Currency School apparently thought that no panics could occur under the new system. Their plan, as soon appeared, did not ensure the observation of the rules of the gold standard. The Bank, secure in the belief that under the new system an over-issue of credit was not possible, entered again, through the Banking Department, into competition with the other banks in the boom associated with the expansion of England's Far Eastern trade, and the renewal of railway construction, which the crisis of 1839 had interrupted. Soon after the Act of 1844 the Bank's discount rate was reduced from 4% to 2½%. The Banking Department's advances increased, and (cf. the theory in Chapter II), so did deposits. The growth of cheques had made possible an expansion of trade without any increase in the note issue—this remained just under £20,000,000. To the rise in prices usually associated with a credit expansion was added

a rise in wheat prices due to bad harvests. Imports increased and the exchanges moved to the gold export point. The Bank's depositors began to draw out gold for export, *not by exchanging notes,* but by drawing out their deposits. The Bank's cash reserve (of gold) dwindled, but the Currency Principle had not been infringed. In 1847 business was booming, and the public's holdings of notes did not decline. The Bank raised its rate to 5% by gradual stages, with no result. It then arbitrarily reduced its advances (discounts), but feared that this might cause a crisis, and soon returned to its easy money policy. Then several merchants engaged in the grain trade failed, and the Bank raised its rate to 5½%. The depression gathered weight, and the Bank limited its advances again. The other banks asked for loans, but the Bank feared that this might lead to a demand for notes which, under the Act of 1844, the Bank could not meet. The Government, after much pressure, suspended the Act and allowed the Bank to issue whatever notes it might need to check the growing panic, regardless of the gold backing. So the crisis passed, having again suggested that to continue lending freely when the exchanges were unfavourable was to perpetuate the drain of gold, to stimulate the boom, and to prepare the way for a crisis.

Another crisis in 1857 led to a second suspension of the Bank Act. Again the Bank had taken part in the preceding boom, lending freely, and again it had delayed too long the increase in the bank rate which might have checked the trouble. Thereafter the bank rate became more pliable. When danger appeared, it was raised, and when the exchanges were favourable, the rate was quickly lowered so that the Bank could lend as freely as the other banks and make profits

for its shareholders. The crisis of 1866 led to a third suspension of the Bank Act, and again the Bank's credit expansion checked the panic. But the Bank continued until 1878 to compete with the other banks for discounts, whenever a high bank rate did not seem necessary. From that year the Bank definitely restricted its commercial operations, and adopted more or less the principles advocated by Palmer in 1832. That is, it would discount bills for the public, but at a *rate* of its own fixing, which might be quite different from the market rate. Gradually, then, the Bank has come to adopt the "rules" of the Gold Standard as explained above. The manipulation of the bank rate has been a more important factor than the provisions of the Act of 1844. Indeed, it was only the recognition of the "rules" of the gold standard which enabled the system introduced by the Act of 1844 to function. England remained on the gold standard until the Great War began in 1914, largely because these "rules" had at last been learned.

§ 6. *The gold standard in other countries.*

Some countries retained a bi-metallic standard much longer than England did, a certain weight of gold being fixed by law as equivalent to a certain weight of silver. In the United States the ratio was, until 1834, 15 of silver = 1 of gold. But the relative market values of silver and gold varied from time to time. When the official rate made silver too dear, and gold too cheap, compared with their market values in other countries, silver would be imported, coined at the mint, and exchanged for gold. The gold would then be exported to a country where it would exchange for a larger quantity of silver. Thus a continuous profit could be made by the importation of silver and

the exportation of gold. There was, for this reason, practically no gold coin in the United States in 1834, so the ratio was changed to 16 : 1, which made gold in America definitely dearer, compared with silver, than in the world markets. People then sent gold to America, exchanged it for silver at this cheap rate, and sold the silver elsewhere for more gold at the market rate. Consequently the United States found itself with less and less silver, until at last, in 1853, token coins were issued to serve as small change. Gold became in effect the standard.

France had a bi-metallic standard while Germany had a silver standard. After the 1850 period of gold discoveries in Australia and California, gold began to grow cheaper, as compared with silver, and the French ratio of 15½ : 1 gave gold a higher official value than it had in the markets. So gold flowed into France, and it looked as though she too would become a gold standard country. Token coins were introduced as early as 1865. The German Government decided to change over to the gold standard, so as to be on a fair competitive footing with other nations. Following the victory over France in 1870, Germany bought large quantities of gold, and set up the new standard. The Scandinavian countries followed in 1872. Holland and soon the bi-metallic countries decided not to coin silver freely, because their ratios made silver far dearer than it was on the markets, and gold was leaving them for the gold standard countries. Once silver metal could not be turned into coin and exchanged for gold at a fixed ratio, there was no point in sending silver into these countries. The old silver coins continued to be worth a certain fraction of the gold coin, although the silver in them became worth far less. Thus they developed into token coins.

These countries have had the benefit of England's earlier experience. They all have had to face difficulties in the shape of an occasional drain of gold, but their central banks have in general adopted the "rules" of the gold standard as worked out in England. In most cases the Government has obliged the Bank to keep a gold reserve of at least a certain proportion of the note issue—a third, or a quarter for instance. But like the limit to the English fiduciary issue by the 1844 Act, these regulations have not been the true source of the strength of the gold standard. The gold standard is a "managed" standard, with the stabilization of exchange rates as its chief purpose.

CHAPTER VII

MONEY AND ECONOMIC FLUCTUATIONS

§ 1. *Fluctuations in employment.*

In the preceding chapter we saw that the maintenance of the gold standard may involve, on occasion, monetary action to produce a decline in business activity. Still earlier, we saw that fluctuations in price levels have important reactions upon the profitability of enterprise, and that such fluctuations in price levels may be produced by monetary policy. In other words, we have already recognized that there is some relationship between money and economic fluctuations, and have made passing reference to matters which illustrate the nature of this relationship. But our chief concern, so far, has been with changes in price levels and in exchange rates; any discussion of changes in the level of employment or production has been incidental and fragmentary. During the period of the war, and in the immediate post-war years, fluctuations in prices and exchange rates tended t‹ occupy the greater part of the attention of student of monetary policy, but since the development of "th great depression" which began in 1929, increasir interest has been taken in this other task of moneta› theory, namely, the explanation of the part which m be played by money in producing, intensifying, alleviating such economic fluctuations.

This is, of course, no new problem. At least since the development of the modern capitalist system, the world has experienced a series of depressions and financial crises, and this instability is one of the most striking features of our modern economic life. As the world has become more closely knit by the growth of trade and communications, these disturbances have tended to grow more and more international, culminating in what is, up to the present, the greatest "world depression".

Various theories have been advanced to explain these fluctuations. Socialist writers have suggested that their origin is to be found in the capitalist system itself, marked, in their opinion, by "anarchy in production", and "under-consumption" owing to the exploitation of the workers. Other writers have sought an explanation in the recognized variations in harvests, traceable in turn to rainfall cycles, and even more remotely, to periodic appearances of sun-spots! Others, again, emphasize the importance of errors of judgment, and moods of optimism and depression on the part of business men. And some students find in the operations of the monetary system an almost complete explanation of depressions. Professor Irving Fisher tells us that the "trade cycle" is simply a "dance of the dollar"—or, more exactly, that it consists in variations in the purchasing power of the monetary unit; Major C. H. Douglas and his followers propose to bring permanent prosperity by a few comparatively simple changes in the monetary system; Mr R. G. Hawtrey has sought to prove that even though there be other causes of depressions, they can usually be offset by an appropriate monetary policy; and Professor von Hayek suggests that, although cyclical fluctuations are largely explicable in terms of monetary and banking

policy, there is little prospect of checking them by monetary measures. The debate goes on, and we need not hope, in this book, to present a conclusion which would win the assent of all the disputants. But we shall attempt to throw some light on the part played by money in causing fluctuations in employment, and to consider some of the proposed solutions of the associated problems. The discussion which follows is the least elementary of the whole book; but this is due to the difficulty of the subject matter.

It is worth emphasizing, to begin with, that these cycles of prosperity and depression are irregular in timing and in intensity, and that no two depressions have been exactly alike. Their incidence on different industries has been different, they have varied in length and in severity, and the intervals between them have ranged from one or two years to ten or twelve years.[1] Nevertheless, there are some important features common to the majority of the cycles for which records are available. The periods of prosperity have often been periods of rising commodity prices, and heavy investment in capital equipment. As prosperity has increased, interest rates have usually risen until after the reaction has set in. The ensuing slump has usually been marked by falling prices, a great reduction in capital investment, a mad scramble for liquidity during which interest rates may harden, and finally a gradual decline in interest rates, as the declining chances of profitable enterprise discourage borrowing. During the upward phase bank advances and bank deposits have almost always expanded rapidly and have contracted, sometimes even more rapidly, in the ensuing depression. The proportion of fixed deposits to current accounts has generally tended to

[1] Cf. the charts in Mitchell: *Business Cycles*, pp. 444-5.

fall in prosperity and to rise with depression. Prosperity has often been accompanied by a speculative boom in land values, or in share prices, and in depression this has then given way to a sharp fall in values.

It is all too easy to seize on *one* of these characteristics, which is frequently observed at some stage of the cycle, and to present it as the cause of the whole cyclical movement. And it is even easier to seize on some development observed before a particular depression, as the cause of it. Some people found a sufficient explanation of Australia's difficulties after 1929 in the heavy loan expenditure and "public and private extravagance" of the preceding years of prosperity. Others attributed the same difficulties to the contraction of bank advances. No such simple theory, however, can be adequate, and a complete theory, which would show the interaction of all the characteristics of the cycle, is beyond the scope of this book, which is concerned with the influence of monetary policy.

But it will be useful to classify the factors which may produce a change in business activity or employment according to whether they are *expansive* or *depressive.* An expansive factor is any influence which tends to stimulate production, employment, and trade, while a depressive factor tends to reduce production, employment, and trade. We have already suggested that rising prices and falling interest rates are expansive factors, and that falling prices and rising interest rates are depressive factors. Whether employment and other tests of business activity do show a movement upwards or downwards depends upon the relative strength of all the expansive and depressive factors which are in operation at the time. Expansive factors may be so outweighed by depressive factors that the resultant tendency is towards depression; on the other

hand the repressive factors may be, as it were, smothered by the expansive factors, so that the resultant tendency is towards prosperity. Again, it is a commonplace that "recovery" from a depression may be retarded by the persistence of certain depressive factors which brake the upward movement. Our study of money and economic fluctuations, then, might be confined to an examination of various forms of monetary action which may act expansively or depressively; and an attempt to determine whether monetary policy can, under appropriate conditions, be merely *neutral.*

Assuming that monetary policy may be expansive or depressive, it may be used to initiate, or at least to facilitate, a "turn upwards", out of depression into recovery; and equally, to initiate, or to facilitate, a "turn downwards" from prosperity towards depression. Most monetary reformers want to achieve the former, and to avoid the latter. But economists have been led to admit that the problem is more complicated than appears from our above classification of expansive and depressive factors. For it has come to be recognized

(*a*) that one type of action may have opposite effects in different circumstances; and

(*b*) that some factors may prove to be *self-reversing;* acting for a time expansively, but indirectly producing conditions which later precipitate depression, or acting for a time depressively, but indirectly producing conditions which favour recovery.

When we have considered in more detail monetary policy as an expansive factor and as a depressive factor, we shall return to these other difficulties.

§ 2. *Monetary policy as a depressive factor.*

Some people believe that there is an ever-present flaw in the monetary system as generally constituted, so

that industry cannot distribute enough money to consumers for them to be able to buy the produce of industry at prices which will cover costs. If this be true, there is a continuously depressive factor at work, which could only be offset by the distribution of additional money to consumers by some special channels. This belief is advanced as a theoretical justification of the so-called "Douglas credit proposals".

In the present system most incomes are received in wages for work done, in rent of property, in interest on money lent, and in profits "made" by enterprises. Public servants' incomes come indirectly, through taxation and other forms of public revenue, from the same sources. Thus a factory or a farm not only produces goods, but it also distributes money to individuals. With the money distributed in this way, the individuals may buy consumers' goods, or they may buy shares in companies or increase their bank deposits. Let us ignore the possibility that the money distributed may be saved and invested or hoarded, and consider only this question: Is sufficient money distributed to buy the goods produced, at prices which cover the cost of production, including wages, raw material costs, bank interest, normal profits for the employer, etc.?

It should be made quite clear that the consumers need receive only sufficient to cover the costs of the *finished* consumers' goods. If the retailer gets sufficient to cover his costs, he can pay the warehouse, which in turn can pay the manufacturer, who in turn can pay for his raw materials and labour. Just as the goods pass from hand to hand in the various stages of production and marketing, so, too, the money paid for the finished goods passes back from hand to

hand. If each firm or individual who handles or works on the goods demands a price to cover his costs, and if the final buyer has sufficient money to buy at a price to cover the costs of the final seller, then there is no deficiency of purchasing power. Some people have a confused notion that the consumers must receive incomes equal to all the costs at all stages of produc-

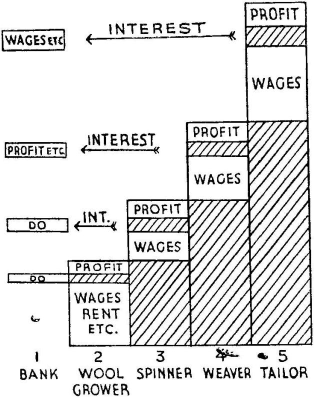

CHART 1.—A AND B PAYMENTS

tion if they are to buy the finished goods; but provided that at each stage of production the goods can be sold at a price to cover costs up to that point, no difficulty need arise, and as we have seen, this condition holds as long as the consumers receive incomes enabling them

to buy at prices sufficient to cover the costs of the sellers of the finished goods.

The problem that faces us, then, is to determine whether industry as a whole distributes enough money incomes in wages, interest, and the like, for the recipients to buy the produce at a price which will cover the retailers' costs. Let us take a hypothetical example, such as the production of tailor-made clothes, and trace out the distribution of money incomes to consumers, and the determination of the prices which will cover full costs. The whole process begins, we may imagine, with a wool-grower, who borrows, from a bank, sufficient money to rent some land, to buy sheep, to keep himself for a year, and to hire such labour as he needs. As he pays out this money some goes direct to buy goods for himself, and the rest to individuals who work for him or supply the land and sheep. Having grown his wool he has it shorn and sells it to a spinning company, asking a price sufficient to repay the bank loan, plus interest, and to yield a "fair profit" to the wool-grower. If we classify all the payments according to whether they are made to individuals or to business institutions, and call them respectively A payments and B payments, it will be seen that only the interest paid to the bank is a B payment. In the diagram the B payments are shaded. Column 2 shows the payments made by the wool-grower, ignoring the repayment of the bank loan.

The spinning company, too, we assume, borrows from the bank sufficient to buy the wool at this price, and to cover its labour costs, rent, etc., involved in turning the wool into yarn. The whole of the purchase price is, from the spinning company's point of view, a B payment, and is shown as such in Column 3. But the wages and other costs are A payments. The yarn

is offered to a weaving company at a price to cover all these costs, which makes it possible to repay the bank loan, plus interest on the loan, and a "fair profit" for the spinning company. The interest is a B payment, but the profit, distributed to individual shareholders, is an A payment. The bank loan is repaid and need not be further considered.

Supposing the weaving company, too, borrows from the bank enough for its B payment for the yarn, and for its labour costs involved in weaving cloth. These labour costs appear in the diagram as A payments. The cloth is then sold to a tailor at a price to cover these A and B payments, which enables the loan to be repaid, plus bank interest (B payment) and profit (A payment). The tailor borrows from a bank the money to buy this cloth, and also money for wages and rent so as to make the cloth into suits. The suits are retailed at a price to cover the cost of the cloth (B payment) and the wages and rent (A payments), which enables the loan to be repaid, plus interest on the loan (B payment), and a fair profit to the tailor (A payment).

Now the only question is whether all the A payments, together, are equal in value to this final price. But to settle this we must trace out what happens to the B payments of bank interest. Column 1 shows the bank's payments; salaries, profits, and interest to depositors. All these are A payments. Taking the whole diagram it is clear that the A payments are sufficient to cover the final price of the finished goods. The diagram also illustrates how, at each stage, the costs of the previous stage are covered by the price paid. Thus there is no flaw in this price system, so far as we have examined it.

The question now arises whether this conclusion is

invalidated by the fact of "technical progress", which makes possible the production of an ever-increasing quantity of goods from the same resources. Will it be necessary to increase the flow of money incomes proportionately with the output of goods, if the latter are to be sold at prices which cover the cost of production? Those who answer this question in the affirmative usually overlook the fact that, if more goods can be made from the same resources, the cost of production per unit of goods will be less than before. This cheapening of the product of industry is usually the first evidence of technical progress; prices are reduced by the force of competition, and consumers, provided their money incomes are constant, can buy more goods than before. There is no "deficiency of purchasing power" involved. It is, of course, true that the holders of stocks of goods produced earlier by more expensive methods may now be forced to sell at a loss if they are to sell at all; but this loss is of the same type as that suffered by the owners of machinery which technical progress has rendered obsolete, and is offset by the profits of those who have adopted the new methods. More important is the fact that the fall in prices associated with technical progress involves an increased real income of goods and services for individuals on fixed incomes. Some people would like to prevent this, on grounds of equity, arguing that any increase in production *should* go to wage earners and others whose activities are responsible for that increase. But our concern is rather the problem of depression. Does the increase in the real income of people on fixed money incomes exert a depressive influence? In so far as the fixed money incomes are fixed interest charges, they are paid out of the earnings of capital equipment. Normally only

part of the latter goes in fixed interest charges, the remainder forming the dividends of ordinary shareholders or of individual business men. If the real earnings of existing capital equipment are constant, their money earnings must fall; when fixed interest charges are deducted, the residual claimants receive lower profits. On the whole it is unlikely that technical progress will increase the real earnings of existing capital equipment by as much as it increases aggregate productivity, so that if prices are allowed to fall sufficiently to keep the money value of the produce constant, there will be a reduction in the profits of some firms, at least. Thus although there is no deficiency of demand there may be a depressive tendency associated with technical progress and falling prices.

On the other hand, money wages rarely fall as quickly as prices, and real wages rise when technical progress brings lower prices. Unless the technical progress has increased the productivity of labour by a proportion similar to the rise in real wages, unemployment tends to grow. In this case, too, a monetary policy which allows prices to fall with technical progress may be a depressive factor. This and the preceding case may be alternative; if technical progress leads to increased production, either capital or labour, or both may become more efficient. It is possible, but by no means probable, that the redistribution of real income occasioned by the fall in prices would adjust wages and capital's share appropriately.

Furthermore, if technical progress displaces workers, even temporarily, from their usual employments, their demand is withdrawn from the market, and profits and prices tend to fall. This means that technical progress may exert a depressive influence unless a monetary

policy is undertaken which will offset the decline in incomes associated with the "technological" unemployment.

Thus, the monetary system does distribute sufficient money in incomes to enable the produce of industry to be bought at a profitable price, so long as total money incomes are constant, but special action may be necessary to prevent a decline in wage earners' incomes if technical progress causes unemployment.[2] And although a fall in prices due to technical progress does not involve any shortage of consumers' demand, if total money incomes are constant, it may nevertheless exert a depressive influence by raising the share of the produce paid in fixed charges, or by raising wages above the productivity of labour. In order to avoid this depressive influence, monetary policy would have to prevent prices from falling by the full amount of the reduction in cost due to technical progress. Some have suggested that no fall in prices should be permitted; but others argue that stability of prices in the face of lower costs would involve an increase in profits, and would tend to have effects similar to those of rising selling prices with constant costs, namely increasing production and a boom. But some increase in profits is necessary to offset the depressive influences noticed above. It is likely that, for the monetary policy to be neutral, some fall in prices would have to be permitted, when technical progress reduces costs, but it appears impossible to decide, beforehand, what degree of decline in prices would be appropriate in any particular case.

Apart from this difficult problem of technical progress, it is obvious that depression can be initiated by

[2] The appropriate action is an apparently expansive monetary policy; see § 3.

anything which reduces buyers' expenditure, without reducing producers' costs correspondingly, and we have already shown in explaining the effect of monetary policy upon prices of consumers' goods, that to discourage "investment" tends to restrict consumers' expenditure. A reduction of the money spent on capital equipment diminishes the incomes of those who were previously employed in making this equipment, and unless savings decline by a similar amount, total expenditure is reduced. Where deliberate action is taken to discourage investment by *raising* the interest rate, it is improbable that savings will decline, and the contraction in investment does not involve any fall in the cost of production. Our discussion in Chapter IV showed that this usually leads to falling prices, and a fall in prices which does not correspond to a fall in costs must reduce profits.

This reduction in profits may, and often does, initiate a vicious circle. Marginal producers, that is, those who were barely making an adequate profit before, now close down and dismiss their employees, whose demand for the produce of other firms is then diminished. At the same time the decline in profits discourages investment still further. To use Wicksell's terminology, the *natural* rate of interest falls, and with a constant *market* rate, the divergence between them becomes more pronounced and prices and profits are reduced still further.

It should be noticed that the depressive influence of a monetary policy which reduces investment below savings does not consist simply of falling prices. The latter are as much a symptom of the depression as a cause, and in some industries prices might not fall. Where production is contracted rapidly, price may be sustained, and sales restricted to the few who can

still afford to pay the high price. In other industries the fall in sales leads to a decline in price, especially when production cannot be quickly reduced, or when the market is overshadowed by accumulated stocks. And once price cutting begins, its competitive force leads other producers into further difficulties, until they, too, reduce prices.

It is also worth noticing that while our analysis shows how monetary policy may initiate a depression, it does not show that any particular depression is in fact initiated in this way. Several theoretical explanations of different depressive factors might be developed, but the task of deciding which one caused any particular depression remains, and can only be settled by a realistic study. But however a depression may be initiated, the monetary mechanism analysed above is liable to reinforce the depressive tendencies.

The effects of a decline in investment are not obvious, and the causal sequence is not likely to be recognized by the ordinary business man. But there is a depressive monetary policy which requires little explanation. If the banking system sets out to reduce its advances, or to increase its cash reserve, dealers, farmers, and manufacturers are asked to reduce their overdrafts suddenly. To comply with the bank's request, business men may be forced into distress sales of goods, at prices perhaps below the cost of production. This immediately cuts into other producers' sales and leads to competitive price cutting, without any compensatory reduction in costs. Profits suffer, and depression spreads.

The natural reaction of producers is to endeavour to reduce their costs; each individual hopes to restore his own profit margin and perhaps even to extend his sales again by quoting a lower price, based on lower

costs. To consider the effects of this would lead us far from monetary theory; we may merely notice that attempts to "close the gap" between costs and prices by cost-cutting alone have had little success. The great difficulty is that wage reductions, in a period of uncertainty, are not likely to lead to a rapid recovery of employment; and unless more workers are employed, lower wages tend to involve lower consumers' expenditure. To the extent that this is the case, the reduction in costs is, on the whole, offset by a similar reduction in receipts, and the gap between costs and prices remains. The chief hope of checking a depression by cost cutting lies in the response, to lower prices, of overseas markets and of export producers, little dependent on local demand, and this response is by no means certain.

One further example of depressive monetary policy may be suggested by this reference to overseas markets. In Chapter V the meaning of "external overvaluation" of a currency was explained. If the exchange rate on London and other centres falls, without any similar fall in Australian costs of production, imports are encouraged and exports are discouraged. Local producers competing with imports lose sales; exporters receive smaller incomes. Both of these developments tend to exercise a depressive influence upon business in general.

There are therefore four ways in which monetary policy may exert a depressive influence upon business, (i) by discouraging investment, e.g. by establishing a market rate of interest above the "natural" rate, (ii) by enforcing a reduction in bank advances, (iii) by allowing the foreign exchange rate to reach or stay at a level which overvalues the currency, and (iv) by allowing technical progress to reduce prices suffici-

ently to involve the difficulties explained above. That monetary policy may operate in these ways is evident from the analysis presented in this and in preceding chapters; monetary policy may therefore be a depressive factor, initiating or prolonging a depression, or acting as a brake upon a boom.

§ 3. *Monetary policy as an expansive factor.*

It is fairly obvious that a good deal of the preceding section is simply the negative side of the problem set in this section. Just as an externally overvalued currency depresses activity in export industries and encourages price cutting in industries faced with foreign competition, so an externally undervalued currency stimulates the export trade, and shelters local producers from foreign competition in the home market. We shall later see that this was important for Australia in the depression. Again, an expansion of investment in excess of saving disburses incomes on a larger scale without directly raising costs. This increases profits, and enables employers to engage more workers. Then incomes are still further increased and the snowball of employment grows. Even if costs rise, expansion of employment may continue, provided investment continues in excess of saving.

Monetary policy can, through these channels, initiate and prolong a boom, or check and retard a depression. Is there a similar counterpart to the pressure to liquidate bank loans which induces distress sales? Banks may announce that they have plenty of money to lend, at low rates of interest. Clearly this might check or retard a depression for the moment by enabling dealers and producers to avoid distress sales. But to initiate or prolong a boom the additional bank credit must be devoted to investment in fixed capital, or be spent

without entering into the ordinary cost of production. The obvious avenues are additions to plant by producers, building for residence or letting, and loan expenditure by Governments, which in some circumstances does depend for its magnitude upon the willingness and ability of banks to expand their loans.

There is however an obvious limit to the power of monetary policy to induce further expansions of business activity and employment, namely the attainment of *full employment.* Once all resources are fully employed, no further increase in production is possible without further technical progress, and any further attempt to expand investment in excess of savings or similar monetary action can only lead to rising prices. We shall see that this actually happened in some European countries after the war. In fact this limit may appear before full employment is reached, because some of the unemployed may have occupations which have been rendered superfluous by changes in consumers' wants, in methods of production, or in the location of industries. They may never find employment in their own trade, and may be too old or too ignorant, or too content with a dole, to move to another trade. Then before they are employed, further expansion of general business activity will bring into employment all *available* resources, and monetary expansion, if continued further, can only lead to a rise in prices. Wicksell and other writers have repeatedly stressed the fact that increased production and higher prices are largely alternative, depending chiefly upon the extent to which resources (especially labour) are already employed before the expansive monetary policy begins to operate. But this point has evidently escaped many of our publicists and politicians. On the one

hand are those who believe that almost unlimited credit expansion is possible "without inflation", by which they mean, without rising prices. But prices *must* rise once everybody is employed, if the flow of money expenditure is further increased. This point is overlooked by the followers of Major Douglas. On the other hand are those who meet any proposal for monetary expansion during a depression by depicting the horrors of the great European inflations, when prices rose so spectacularly. But until unemployment fell to a lower figure, monetary expansion in a depression would involve little or no rise in prices. To what exact figure unemployment could be brought by monetary policy without provoking sharply rising prices cannot be easily established; it might well for various reasons be above the pre-depression level, but would certainly be below the level of 1933-34.

In view of this popular confusion, it is difficult to attach an exact meaning to the terms inflation and deflation. It is best to avoid them when there is any possibility of ambiguity, or to qualify them. If inflation (and the derived adjective, inflationary), be taken to refer in general to any policy designed to increase the flow of money incomes, without increasing the current production of consumers' goods, and deflation its opposite, the addition of the adjective "mild" or "extreme" may make clearer the intention of the speaker. Again, price inflation refers obviously to raising prices by monetary action, yet "mild inflation" might check a fall in prices, without raising them. The term "reflation" implies a policy of monetary expansion, designed to restore prices to their former level in some chosen year, or otherwise to counteract the effects of previous deflation.

§ 4. *Monetary policy as a self-reversing factor.*

A self-reversing factor, it will be remembered, is one which initiates or strengthens a movement in one direction for a period of time and then, somehow or other, produces a reaction in the opposite direction. An example apart from monetary policy may make our concept clearer. Some economists attach much importance to the instability of psychological factors, and think that the boom is carried on, with growing enthusiasm and continued confidence, until something happens to disillusion investors and business men, and to initiate psychological depression. Thus the psychological situation may be an expansive factor or a depressive factor. But some have suggested that there is a certain impermanence in the emotional state associated with speculation and great confidence, and that even in the absence of an outside blow to confidence, a psychological reaction sooner or later sets in, relaxing the tension of optimism and leaving people pessimistic. This is a phenomenon comparable psychologically with the "backsliding" which often follows an emotional religious conversion, and with the fickleness of crowd opinion. A similar rhythm appears in the yield of some plants such as the coffee plant. Climatic conditions may combine to produce a good crop; this exhausts the plants, and the next year's crop is inevitably smaller as a result. The favourable season is, in the coffee growing industry, a self-reversing factor.

Is this the case with monetary policy, too? Will monetary expansion stimulate business only temporarily and then produce a reaction? It can be shown that with the quantity of cash, that is, notes and coin and bullion, constant, a credit expansion is likely to lead to a credit contraction later. For a credit expansion increases employment and tends to raise prices,

so that the public's demand for cash to hold tends to expand. With the total quantity of cash constant, the banks' holdings are accordingly diminished, and this usually induces a credit contraction, unless for some reason the banks have decided to manage with a lower cash reserve. We have seen that a credit expansion rarely comes except through an increase in the total quantity of cash in the hands of the banks, yet an expansion of credit appropriate to any considerable acquisition of cash is likely to produce the withdrawal of some cash from the banks. If this happened immediately, the expansion of credit would thereby be limited; but since the rise in employment and prices is likely to come some time *after* the expansion of credit has taken place, a contraction is necessary to restore the customary cash reserve ratio.

There is a special reason why the maintenance of investment in excess of savings, once full employment of the available resources has been reached, requires an ever increasing expansion of credit, and will produce a definite reaction once this expansion of credit is checked. With full employment, investment involves the withdrawal of resources, such as labour and raw materials, out of consumers' goods industries into the industries producing capital equipment. Unless technical progress makes possible a simultaneous increase in the productivity of the labour and other resources which are left in the consumers' goods industries, the latter's output must decline. Thus although wages and other incomes are tending to rise, the supply of consumers' goods tends to fall. Consequently, the prices of consumers' goods rise, and the profits of those who make them. The consumers' goods industries are able to offer still higher wages and prices to retain the labour and other resources which are

required to carry through the investments. If savings were equal to investment, this competition between consumers' goods industries and capital producing industries for the labour and other resources could not arise, since the demand for consumers' goods would be less. But with investment in excess of savings, this competition bids up costs generally, and further credit expansion is necessary. When the check comes, and there is even a slight credit contraction and a rise in the rate of interest, investment declines. The demand for capital equipment decreases, and the industries producing capital goods suffer depression, which soon spreads to the other industries.

Some economists, following Professor von Hayek, use a similar analysis to support the view that any excess of investment over savings must lead, after a period of expanding employment, to a reduction in investment and a depression. But this analysis is only applicable to a period in which the available resources are fully employed, since if idle resources are available, there is no competition between consumers' goods industries and capital producing industries for each other's resources. Before the analysis can be accepted as an explanation of any particular depression, it must be shown that the available resources were, in fact, fully employed before the reaction set in. And apart from this rather complicated theory there is the possibility noted above, that a reaction may come because an expansion of credit involves a *delayed* action in the banks' cash reserve ratio.

A deliberate policy of encouraging investment undertaken at a time when the banks' reserve ratios are unusually high will gradually reduce them to normal; but if persisted in beyond that point will necessitate an increase in the quantity of cash. Indeed, if invest-

ments continue in excess of savings up to the point where cash reserve ratios have fallen to normal, either some reaction in business or an increase in the quantity of cash is inevitable. Even though investments be discouraged, the previous boom is likely to carry on further, and to involve a greater demand for cash on the part of the public. It is in practice a difficult thing to manage an expansion of investment in such a way as to get the maximum possible impulse to enterprise, without either having to increase cash or central bank credit, or provoking a reversal of the upward movement. This reversal can be postponed by further expansion of credit by the banks, and by public works or other investments on a large scale, but only if one be prepared to expand central bank credit and the note issue accordingly. If persisted in long enough, such a policy brings full employment of the available resources, and thereafter price inflation. This in turn may lead to a breakdown of the whole mechanism of exchange and credit.

We may conclude therefore that in the absence of a continued extension of central bank credit or other additions to the quantity of cash, an expansion of ordinary bank credit, or a policy of public investment is likely to lead to a reaction, and will operate as a self-reversing factor. This does not mean that an expansive monetary policy is futile. The correct inference is rather that an expansive policy requires appropriate additions to the quantity of cash or central bank credit, until full employment of the available resources becomes possible, or perhaps until just before this stage of recovery is reached. Then if the arrest of monetary expansion does create a reaction, its consequences will be less serious than those of a reversal in the earlier stages of recovery.

Theoretically it is conceivable, although practically improbable, that a policy of monetary expansion should lead to a reversal through the rapid growth of savings while investment lags. If all those brought into employment and those who make profits through the effects of monetary expansion have an iron determination to save money, this will certainly serve as a brake upon the upward movement. But it is unlikely that it will definitely reverse it.

Let us turn now to deflationary monetary policy. Can this too set in operation forces which will ultimately produce a turn upwards, despite the immediate depressive effect upon business? Here we meet the theory of the "cleansing crisis", as German writers put it. The boom years are normally accompanied by "unhealthy" business developments; management is less efficient on the average (if only because the number of businesses increases), and errors of judgment are made in the investment of resources. A sharp credit contraction, it is suggested, reveals the weaknesses which were not apparent when credit was plentiful and cheap, and weeds out the more inefficient concerns. The firms that are strongest weather the storm, and are subject to less cut-throat competition, and the weaker ones are eliminated, and so recovery comes through improved efficiency. It may be objected, however, that the firms which are eliminated by a sharp credit contraction are not always the least efficient technically, for the determining factor is likely to be *liquidity* of assets. Because a firm cannot "realize" quickly upon portion of its assets, it may be involved in heavy losses, although as a *producing* unit, it is economically administered and well situated. There is sufficient force in this objection to render one less confident of the efficacy of the cleansing crisis,

although it is true that in some industries greater liquidity of assets is desirable.

It should be pointed out, too, that deflation, as well as inflation, can "get out of hand". A credit contraction may not only perform the function of cleansing, but also promote a struggle for liquidity, which will bring down firm after firm, and extend to individuals, leading them to hoard their incomes. As Professor Marco Fanno has expressed it, deflation, like inflation, may reach a "critical point", after which the collapse of exchange and credit tends to ruin *all* sections of the community.

Both credit expansion and credit contraction may, then, operate as self-reversing factors. But there is this difference, that in the former case the reversal appears if the expansion be carried "too far"; whereas in the latter case the reversal appears only if the contraction is not carried too far.

Before leaving this section, we may refer to the second complication noted on page 158, for it is closely related in practice to the self-reversing aspects of monetary policy. It is fairly obvious that an expansive monetary policy may, in unfavourable circumstances, prove to be neutral. At a period when the future is uncertain, or demand very sluggish, reductions in the interest rate, and the offers of loans by the banks, may not produce any appreciable recovery of employment. Again, as we saw in § 2 of this chapter, an apparently neutral monetary policy may be depressive if there is technical progress. And it is even possible that in some circumstances an apparently expansive monetary policy may prove to be depressive. If people believe that inflation spells disaster they may, when informed that an inflationary policy is to be adopted, buy nothing but foreign exchange, and

precipitate a complete collapse of the currency, such as we shall study in our next chapter. The same monetary policy, then, may have different effects under different conditions, and there are some grounds for the view that a radical monetary policy has most chance of success, if it be proposed and carried through by a conservative Government.

In the case of apparently depressive monetary policy, while it may be neutral if the business world is very optimistic and carried off its feet, it is difficult to imagine circumstances in which credit contraction would prove to be in practice, an expansive influence. The theory of the "cleansing crisis" is quite distinct from this; it admits a factor which exercises a depressive influence, but *subsequently* creates conditions suitable to recovery.

§ 5. *Monetary policy as a stabilizing factor.*

In view of the foregoing, is it possible to conceive and to administer a monetary policy such as would prevent or at least alleviate the severity of economic fluctuations? A study of the abundant literature will show that there are many who do conceive such policies, but that there are widely differing opinions as to what form the policy should take.

Some, for instance, would endeavour to stabilize "the price level", by which is usually meant the price level whose movements are measured by some wholesale price index-number. Whenever the index-number rose, credit would be contracted; and whenever it fell, credit would be expanded. But against this, others have argued that where falling prices are due to technical progress and the reduction of costs, the expansion of credit to prevent the price decline would raise profits and stimulate economic activity in just the same way as would

a credit expansion which, in the absence of falling costs, led to rising prices. The appropriate monetary policy, to avoid both booms and depressions, would therefore be one, it is suggested, which allowed prices to fall equally with the fall in costs due to technical progress, but no further. It is argued that only such a policy would be neither inflationary nor deflationary, but in view of our discussion in § 2, this view cannot be accepted. In any case, how are we to determine to what extent a fall in prices is due to technical progress?

Others suggest that we should stabilize wages and salaries. Individual wage changes would be permitted, but average wages for the whole of industry would be kept constant in terms of money. Then if the average wage showed any tendency to fall, or if the growth of unemployment threatened such a fall, credit should be expanded until the danger had passed. Conversely, if money wages tended to rise (which implies full employment and inflationary tendencies) there should be a credit contraction.

Again, it is suggested that no single guide to monetary policy can be adequate, and that an attempt must be made "simply" to check booms or depressions as their approach is detected, by contracting or expanding credit. The imminence of a boom or depression is to be detected by the study of comprehensive statistical series of all kinds, and this assumes a knowledge of the significance of movements of various economic phenomena such as prices, interest rates, employment, production, bank clearings, and the like. This knowledge is not yet available with sufficient detail and accuracy to enable *certain* prediction of the coming boom or depression, but remarkable progress has been made in this direction.

Meantime, the practical problem which the world is more likely to have to face is, what to do when a depression or a boom actually comes upon us unawares. Then it is too late to plan a policy of stabilization; the pressing problem is to prevent the boom from collapsing into depression, or of checking and reversing the depression which has already started. In the former case, however, there is usually so much uncertainty as to whether this is a dangerous boom or not, that drastic action is unlikely. It is in the depression that monetary policy is looked to, as a method of preventing things from getting worse and of restoring prosperity. On this there are three groups of opinion:

(i) There is that represented by the inflationists and followers of Douglas, who would "pump money" into circulation; (ii) next, there is that represented by many academic economists who believe that monetary expansion is of definite, if limited value, but is likely to succeed only if administered by people who completely understand the processes involved, and are prepared to check it at the appropriate moment. This consideration usually prevents them from supporting the inflationists, who have no qualms regarding the need for nice adjustment; yet they cannot support the third group; (iii) finally there is the group represented by those who take it upon themselves to defend what they call "sound finance", oppose any "tinkering with money", and pin their faith to cost-cutting as a remedy for depression. To these must be added a few economists who have accepted Professor Hayek's view that monetary expansion could only deepen the depression. The basis of the second group's reluctance to support with any enthusiasm either the inflationists or the "sound finance" group will be clear from the analysis presented in this and other chapters.

One further comment on the difficulties of adjusting monetary policy to the requirements of economic stability is in place here. We have spoken of credit expansion and contraction, and, more generally, of monetary expansion and contraction, but we have not considered in detail the mechanism by which this expansion or contraction is effected. The only type of expansion which tends to raise prices or to stimulate employment, is an expansion of money *expenditure* in excess of the costs of current production. Neither the printing of notes, nor the announcement of the banks' willingness to lend necessarily provides such an expansion. To be effective, monetary expansion may require public action to borrow the additional credit, and to spend it. This is why public works, whose financing in times of full employment must withdraw resources from private enterprise, are advocated, in periods of depression, as a useful method of carrying through a policy of monetary expansion. In Mr Keynes's terminology, explained in Chapter IV, an increase in public works, financed out of central bank credit or out of a note issue, represents increased investments unaccompanied by increased savings, and tends to raise the prices of consumers' goods and the profits of those who produce them. What is often overlooked, however, is that when banks' cash reserves are abnormally high, public borrowing for public works, even without any increase in central bank credit or in the note issue, will tend to sustain prices and profits. For as people withdraw money on fixed deposit from the banks to buy Government bonds, and the Government spends the money on public works, this represents an increase in investments without any increase in savings. If by inflation we mean a policy designed to increase the flow of money incomes, independently of production of consumers' goods, then

public works in a time of depression are inflationary whether or not they be financed by central bank credit.

If a Government can command public confidence, and if the banks' cash reserves are abnormally high, an addition to the note issue, or to the volume of central bank credit may be superfluous. In any case public works would probably be necessary to make it effective, and the public works would have the same result without the creation of additional money. The necessity of the latter could appear only when the banks' reserve ratio approached its customary level. As economic activity was stimulated, more applications would be made to the banks for loans, and as these were granted, the cheques would go to swell other persons' deposits, and even lead to some drain of cash into the public's pocket. Thus the reserve ratio would fall, and the banks would become less willing to lend. If there were still many unemployed in industries capable of further stimulation by general monetary expansion, it would then be necessary to make additions to the quantity of money (or central bank credit) lest borrowing for further public works should withdraw credit from industry. The first sign of this stage having been reached would probably be a hardening of interest rates, and a fall in the price of Government bonds; and the continuance of the expansion of money expenditure could be facilitated by the central bank purchasing Government bonds.

The relevance of these points to Australian policy will be shown in our concluding chapter. Enough has been said to indicate both the possibilities of monetary policy as a way of combating depressions, and the complexity of the problem in theory and in practice.

CHAPTER VIII

TWENTY YEARS OF MONETARY INSTABILITY

§ 1. *War finance and inflation.*

The preceding chapters have been chiefly concerned with explaining the theory of money. But theory is merely the study of practice, and our theory will prove its value as we consider in more detail some of the concrete problems of recent years and of the present day. In this chapter we shall review briefly the outstanding monetary happenings in the world at large during the last twenty years, for this is both a necessary background for our following chapters on Australia, and a fund of illustration for the theories outlined earlier in the book.

The year 1914 is a convenient starting point, because the war and its aftermath threw the monetary systems of many countries into a confusion without parallel in modern times. In at least one respect, however, war finance in the twentieth century resembles that of the Napoleonic wars mentioned in Chapter VI, namely, the use of the printing press, to "make" money. The expenses of the war of 1914 were heavy, far too heavy to be met by the usual forms of taxation, so the various Governments had recourse to borrowing from the public and from the banks. But even this would have been inadequate had it not been for the provision of extra paper money. The Governments might have simply printed notes, and spent them; or they might

have empowered banks to extend their note issue regardless of its gold backing; but in most countries some roundabout procedure was adopted which led people to believe that there was no "inflation of the currency". In Great Britain, for instance, the outbreak of war brought, as in many countries, a financial crisis. A bank holiday was declared, the Government promised to suspend the Bank Act[1] if necessary, and arrangements were made for an emergency issue of £1 and 10s. "currency notes" to meet any demand for extra cash. These notes were to be lent by the Treasury to banks only, at the current bank rate of interest, and would presumably be returned to the Treasury once the panic had passed. The extra notes were not in fact needed, for the panic was over almost as soon as it had begun. But instead of withdrawing the emergency currency, the Government decided to issue the notes to anybody, through the Bank of England, upon payment of their face value in cash or by cheque on a bank. At that time the Bank of England notes were not issued at a lower denomination than £5, and the object of the new issue now seemed to be simply to encourage people to use paper money instead of sovereigns and half-sovereigns. In this way, said the Chancellor of the Exchequer (Mr Lloyd George) the integrity of the gold standard would be maintained, and a patriotic appeal to this effect was made to the people.

But once the notes were accepted at their face value, the way was open for inflation. To stem the initial panic the Bank of England had announced its willingness to discount bills of exchange, and even to extend them when they fell due. In this way the Bank lent freely, almost trebling its holdings of securities in six months. Its cash reserve was not, however, endangered

[1] See above, p. 148.

as it would be by such a policy in normal times, partly because gold was paid in by patriotic citizens in exchange for Treasury notes, and more especially because the people to whom the Bank lent could always obtain cash in the form of the new paper money, by presenting a cheque on the Bank of England. In so far as these borrowers paid cheques to people who banked with the trading banks, the latter's cash reserves rose, and they, too, lent freely. Before long the bills of exchange which the Bank had taken up began to mature and to be met, so that the Bank's credit expansion could have given way to a credit contraction. But by now the Government wanted to borrow, on short term, and this offset any decline in the Bank's advances to business men.

As credit expanded, so did expenditure on such goods as munitions and other war material. Prices rose, wages followed, and the cost of government, together with the cost of fighting, increased accordingly. This increased the tendency for taxation and public loans to lag behind Government expenditure, and precipitated further expansions of credit by the Bank of England. Incomes generally rose, and their expenditure forced up prices generally. As the public's demand for cash to carry about in their pockets grew, it was met by further issues of currency notes by the Treasury.

It might have been expected that this rise in prices would lead to a decline in exports and an increase in imports. Moreover, heavy payments had to be made to the United States for war material. By 1915 the exchange rate on New York had moved to the gold export point, and England began to export gold. Under the pre-war gold standard this would have led to a credit contraction and a fall in prices. But observ-

ance of the "rules" of the gold standard was held to be less important than winning the war, so at the end of December the melting down of gold coin was forbidden. Its exportation was not directly prohibited, but the risks of loss from submarine attack were now great, and the Government by its control of shipping was able to refuse cargo space to those who proposed to ship gold. The sovereign had already disappeared from internal trade, and now gold could not be used in foreign trade.

In these circumstances the automatic limitation of exchange fluctuations within the gold points no longer operated, and the pound tended to depreciate, especially in terms of the dollar. So the pound was "pegged" at \$4·76. That is, the Government made arrangements to buy American securities owned by British citizens, and accordingly, having sold these securities for dollars, could buy pounds and sell dollars whenever the pound tended to fall below the above rate. The American Government lent sums direct for this purpose, after joining the Allies in 1917. On the other hand, Great Britain helped to "peg" the franc and the lira in a similar fashion.

The artificial stability of the exchanges, the absence of any legal prohibition of the export of gold, and the belief that high prices were due to profiteers, prevented an early recognition of the fact of inflation. By the end of the war prices had on the average more than doubled; and the total note issue had risen from just under £180,000,000 in June, 1914, to £382,730,000 in July, 1918. Compared with some other countries, this was mild. Germany's war finance was based on the assumption, at least in the earlier years, that the bill for the costs of the war would be met by her vanquished opponents. In 1913 tax receipts covered 81·8% of total expenditure; in 1915 they covered only 6·9%. The

coin and paper circulation rose from 5·5 milliard marks in 1913 to 32 milliard in 1918, and bank deposits from 13·7 milliard to 48 milliard. In Russia, the Government's deficits in the period 1914-17 were 75% of its expenditure, and this had to be met by bank credit and currency inflation. From July, 1915, to October, 1917, the note issue jumped from 3,756 million roubles to 18,917 million. The note issue in Austria rose from 500 million crowns in 1914 to 12,120 million in 1919, and the cost of living had risen to 39 times the pre-war level. Taxation covered only 15% of France's war time expenditure, and deficits in five years amounted to nearly 148 milliard francs. The note issue jumped from 6·7 milliards in 1914 to 30·2 milliards in 1918.

In all these countries, inflation was little short of a means of taxation. The Governments received loans from the banks and spent the proceeds, so that, with full employment, demand was continually outstripping production. Prices inevitably rose, business men almost inevitably made profits, and the Governments proceeded to tax these profits. Apart from this, people on fixed incomes and all whose incomes lagged behind the rise of prices, had to restrict their consumption. They were *forced* to save in order to enable the Governments to maintain expenditure for war purposes. It may be questioned whether the war could have been financed in any other way, since in the absence of inflation, taxation would have had to rise to still greater heights. But whether or not inflation was necessary, it is evident that it paved the way for the currency disasters which followed the war.

§ 2. *Post-war inflation.*

Peace brought with it economic difficulties. The armies had to be demobilized, and employment found

for them in civilian pursuits. Devastated areas had to be reconstructed in some countries. In others, political revolution had opened the way to more democratic forms of government, and social unrest was widespread. At first, however, business was brisk, and in 1919 a boom developed, which gave way in 1920 to a sharp depression. This slump was partly due to the suspension of inflation in some countries. Whatever its cause, one effect was to dissipate a good deal of the facile optimism engendered by the cessation of hostilities.

In Great Britain efforts were made, from the beginning of the Armistice, to check inflation and to restore monetary stability. Shortly before the end of the war, the Cunliffe Committee had recommended that a gold reserve of £150,000,000 should be aimed at, and that until this was achieved, and the foreign exchanges were stabilized, the fiduciary (uncovered) note issue should be gradually reduced. In December, 1919, the same Committee proposed that the fiduciary issue should not exceed, in any year, its lowest level of the previous year. The pursuit of this policy involved some restriction of credit, and the Bank of England employed early in 1920 the traditional method of checking credit expansion, namely an increase in the Bank rate. It was then that a reaction from the "peace boom" set in, with a severe fall in prices, many business failures, and a rapid increase in unemployment. This was accompanied by a rise in sterling, as might be expected from the theory of the exchanges, but in 1921 America, too, experienced severe deflation, which drove American prices down even more rapidly than British prices. Consequently the dollar rose again in terms of sterling. There was much discussion as to what monetary policy England should follow, but however strongly

some wanted to see a return to gold at the pre-war parity with the dollar, the depression discouraged any immediate attempt to raise the sterling exchange by further deflation in England.

Meanwhile Germany was undergoing "the great inflation". To her the Armistice brought not only revolution, but a financial crisis and a run on the banks. Budgets were hopelessly unbalanced, and owing to the rapid rise in prices experienced towards the end of the war, the German people would not subscribe to long term loans. The floating debt jumped from 45 milliard marks in November, 1918, to 86 milliard marks a year later, and the note issue from 32 milliard marks to 49 milliard marks. With English prices rising much less rapidly, the exchange value of the mark fell to 180 to the £1. (The gold parity was 20·42 marks to £1.) Its subsequent fluctuations were partly due to waves of speculation. In 1920, the mark rose from 335 to the £1 in February, to 152 in July, and had fallen again to 265 by November. In May, 1921, the mark stood at 247 to £1, and the announcement that Germany would be expected to pay a total indemnity of 132 milliard *gold* marks was followed by a fall in the exchange to 1,041 marks to £1 in November. The note issue had risen to 122 milliard marks, and the "vicious circle" of inflation was now evident. A fall in the mark on the foreign exchange raised the prices of imports and sent the German people scurrying to buy goods in Germany; prices generally were marked up; salaries and wages had to be raised; budget deficits increased; more notes were printed; prices rose still further; and the value of the mark on the exchanges dropped again. At the end of 1922 it was decided that Germany had defaulted on some of her reparations payments, and in January, 1923, French and Belgian

troops occupied the Ruhr Valley, to enforce deliveries of coal. This meant that the German Government lost revenue, and in addition it devoted large sums to financing "passive resistance" in the occupied area. Inflation proceeded, and the exchange value of the mark fell from 130,750 to £1 in February, 1923, to 18,349,000,000 to £1 in December. By October, 1923, taxes provided only 1% of the month's public expenditure, and the mark had been abandoned as a measure of relative values, prices being calculated according to the dollar rate of exchange.

The inflation brought with it full employment, and great industrial activity. Anybody holding stocks of goods was certain to sell at a profit. Anybody who borrowed knew that he could easily repay the loan a few months later by selling a far smaller quantity of goods than the present value of the loan. People dependent upon interest from Government loans were ruined, the thrifty lost their savings, and workers on fixed incomes, or those who could not easily have their incomes adjusted to the rise in prices, suffered a great reduction of real income. Although business was so brisk, there was little increase in production. Once everybody was employed, further credit expansion and inflation simply forced up prices. (Cf. Chapter VII.) The instability of prices made necessary the employment of armies of clerks and accountants to handle the vast quantities of notes, and to calculate costs and prices. And with all this, there seemed to be a shortage of cash. Municipalities issued their own notes; and the Central Government found difficulty in printing notes fast enough to cope with the rapid rise in the cost of government. In September, 1922, a strike of note printers seriously embarrassed the Govern-

ment, and the right of this class of worker to strike was abolished. The whole economic organization of Germany was in danger of collapse in 1923, because there was no longer an adequate medium of exchange and measure of relative values in the country.

The stabilization of the mark has been described as a confidence trick. A new currency was established in October, 1923, "based" on the natural wealth of the German people. The various economic units of Germany were to establish a new bank, the original capital to be raised by a mortgage on private property, and against these mortgages, interest bearing bonds were issued. In turn these bonds were used as "cover" for a new note issue, the *Rentenmark*. Legally these notes were convertible into bonds giving the holder a mortgage over certain private property, but in practice they were not convertible. Nevertheless, people had confidence in the new notes and rushed to change depreciated marks into Rentenmarks, at the ruling rate of exchange for gold currencies. Bonds worth 2,400 millions of gold marks were issued, and part of the notes were to go to the Government to reduce the floating debt and to be used for general purposes, while part was to provide credit to industry and agriculture through the Reichsbank. Anybody could trade in paper marks for the new Rentenmark. Passive resistance in the Ruhr was abandoned, and reparation payments were resumed. The taxation system was reformed, and economies were made in the staffing of departments. Although taxes were payable in paper marks, they were now to be reckoned in terms of gold marks. As a result of all these measures, the Government had a budget surplus by March, 1924, and stabilization was achieved. With the Dawes Plan came the issue of a new "gold" *Reichsmark* equal in value to the Renten-

mark, and to the pre-war gold mark. This was worth one billion (1,000,000,000,000) depreciated paper marks. The new Reichsmark was convertible into gold, and Germany agreed to maintain the gold standard, although gold pieces did not come into circulation.

Austria had had a somewhat similar experience. In 1918 the crown had depreciated to one third of its gold parity, and by 1922, its value had fallen to $^1/_{15000}$ its original gold content. Following the Czech revolution in October, 1918, the Austro-Hungarian Empire was split up, and Vienna became the capital of a little country that had lost many of its markets and sources of raw materials. The population endured great privations. Many died from under-nourishment, and even horseflesh became a great delicacy. It was only foreign assistance which prevented death from starvation on a large scale. The public finances were almost completely disorganized. The bank of issue sent enough notes to each department once or twice a week to pay the excess of expenses over receipts, and the Ministry of Finance would not know how much had been spent until months later. Thus the note issue rose from 12,120 million crowns in December, 1919, to 4,080,180 million three years later, and the cost of living price index-number jumped from 39 to 8,375. After some attempts to raise foreign loans, the Government appealed to the League of Nations in September, 1922. Finally an international loan was guaranteed, the Government promised to put its finances in order, and the League appointed a Commissioner-General to supervise Austrian loan expenditure. "Confidence was restored" and the currency was stabilized.

Such troubles were not limited to the vanquished powers. France attempted to deflate in 1920-21, when the Government set out to repay portion of the

advances made by the Bank of France. But even this was achieved only by floating public loans, and as France shared in the 1920-21 depression, the Government's financial difficulties led to further inflation. The invasion of the Ruhr, which precipitated the collapse of the mark, also shook the franc. As at first no coal deliveries were obtained from Germany, France's imports of coal from England and America placed a further strain on the French exchange, already weakened by the rise of prices in 1923. Then began a flight from the franc, and a vicious circle of inflation similar to those experienced in Germany and Austria. Finally stabilization was achieved in 1928 at a rate some five times below the pre-war gold value of the franc.

Certain interesting features were common to these three inflations. In the earlier stages, inflation brought full employment and great business activity. But at a later stage the rise in prices became so rapid as to disorganize industry, and the currency in Germany and Austria became almost useless as currency, while the same development appeared probable in France, too. Again, in each of the three countries, the earlier depreciation of the exchange followed rises in prices within the country, and seemed to verify the purchasing power parity theory of the exchanges. But at a later stage, the external value of the currency fell faster than its internal purchasing power, and the rise in internal prices preceded additions to the note issue. This stage is known as the flight from the currency. People fled to buy, not only foreign currencies, but also goods. In terms of the quantity theory of money, prices were rising faster than the note issue, because the velocity of circulation had risen. In terms of the "Cambridge" theory, everybody was keeping his cash

holdings (his demand for money) as small as possible, and thereby decreasing the value of money. According to the theory given in Chapter IV, § 1, it was simply the growth of expenditure ahead of production which drove prices up. But the *origin* of this rapid rise in prices was to be found in the psychological situation which reacted upon the "velocity of circulation", or the "demand for money", or "consumers' expenditure". Once confidence was restored, the psychological situation was changed, and in all three countries, further considerable expansion of the note issue was made after stabilization, without producing any additional rise in prices.

§ 3. *The return to gold.*

Stabilization was generally taken to mean a return to the gold standard. In 1922 an International Conference at Genoa had laid down certain principles regarding monetary policy, and placed the gold standard in the forefront. "It is desirable that all European currencies should be based upon a common standard. Gold is the only common standard which all European countries could at present agree to adopt." And Governments should declare their intention to re-establish gold ultimately. But the Conference foresaw the possibility of this leading to a struggle for gold, and advocated an international convention "to centralize and co-ordinate the demand for gold, and so to avoid those wide fluctuations in the purchasing power of gold which might otherwise result from the simultaneous and competitive efforts of a number of countries to secure metallic reserves. The convention should embody some means of economizing the use of gold by maintaining reserves in the form of foreign balances, such for example as the gold

exchange standard or an international clearing system". We shall see below how the absence of such co-operation influenced the course of the world slump of 1929.

Great Britain returned to gold as soon as appeared possible, but not until Germany and Austria had undertaken the restoration of their monetary systems. Some other countries, including the Dominions, which had escaped the more extreme variety of inflation, were awaiting England's lead. The only questions were: When? and At what rate? Until 1925, the pound was still below its pre-war value in terms of dollars. Some sections of opinion, especially those representing the commercial and financial interests of London, urged that the English pound must, for reasons of prestige, return to gold at its pre-war rate. Others pointed out that to set up this rate artificially, when the "natural" exchange value of the pound was somewhat lower, would place England's export industries at a grave disadvantage. Accordingly they advocated "devaluation", that is, a return to gold but at a lower rate; so that a pound note would be convertible into a smaller quantity of gold than before the war. This, they said, would be preferable either to a precipitate restoration of the pre-war parity when the pound was still depreciated, or to such deflation as would be necessary to bring its value up to pre-war parity. The problem was complicated by the operation of two other variables. One was the movement of prices in America, since, if American prices rose, the dollar might be expected to fall relatively to the pound, which would thereby approach pre-war parity even without further deflation in Great Britain. The other was the influence of speculation. In 1924 the pound's exchange value

was rising, and it was uncertain how far this was due to speculators who expected an early return to gold.

Finally, when the pound had risen to only 1½% below parity with the dollar, the Government announced in April, 1925, its decision to return immediately to the gold standard at the original parity. The Dominions followed suit. But the "new gold standard" differed in some important respects from the pre-war gold standard. Sovereigns had been out of circulation for some ten years, and "currency notes" served the purpose quite well. Nobody particularly wanted golden coins in circulation, and the Bank of England least of all. The notes were made convertible into gold, thus restoring the gold standard, but only in the form of bullion, in bars of 400oz. of fine gold. This meant that £1 note could not be converted into a sovereign, but notes to the value of about £1700 could be converted into bullion. Clearly the only people likely to want gold in such quantities would be those who wished to export it. The new gold standard would work like the old one as regards the regulation of exchange rates, but no gold would be in circulation as currency within the country. The rules for the fiduciary issue formulated by the Cunliffe Committee continued until 1928, that is, the uncovered note issue was not allowed to exceed the minimum of the previous year. In 1928 this was revised. The Treasury notes were replaced by notes issued by the Bank of England, and the maximum fiduciary issue was fixed at £260,000,000. This limit, however, could be extended in case of necessity, without legislation, by the Treasury. Up to £5,500,000 the issue might be covered by silver.

The general principle of the new English gold standard and note issue was much the same as the pre-

war principle. Gold was freely exportable, and the convertibility of the notes was apparently provided for by the limit to the fiduciary issue, so that unless this limit were varied by the Treasury, an outflow of gold would tend to produce contraction of credit, as explained in a previous chapter. But the efficient working of the system depended less upon the limit to the fiduciary issue than upon the observance of the "rules of the gold standard", which had been learned through experience in the nineteenth century. (Cf. Chapter VI.)

The British system of a fixed maximum fiduciary issue may be contrasted with the system adopted in many other countries, in which provision is made for the gold reserve to bear at least a certain *proportion* to the total note issue. This means that the uncovered note issue is not necessarily constant, but may vary proportionately with the size of the gold reserve. Thus a given inflow of gold makes legally possible a greater expansion of the note issue in those countries than it would in England. In some countries, part of the proportionate reserve may be held in foreign money. For instance, in 1924 the German Reichsbank was instructed to keep a "gold cover" of not less than 40% of the notes in circulation. Of this reserve one-quarter might be held in the form of *Devisen,* i.e. "bank notes, bills of exchange having not more than fourteen days to run, cheques and claims due from day to day, payable in foreign currency by a bank of known solvency in foreign financial centres". This cover of 40% can be and has been reduced by resolution of the General Board of the Reichsbank. In France, too, the system of a proportionate reserve was adopted, and the Bank of France, since 1928, has to keep a reserve of gold equal to at least 35% of its note issue and current

accounts. Austria was not able to resume gold payments immediately after stabilization; although she maintained the value of her currency on the foreign exchanges until the world depression, she has not technically returned to the gold standard. The Austrian National Bank was, however, to hold a metal reserve equal to 20% of the note issue, and to increase the proportion gradually to 33⅓%.

Although the United States had prohibited the export of gold in 1917 when it entered the war, there had never been any danger of gold being exported, and, even before the ban on gold exports was lifted, a depreciated currency's value in terms of gold was synonymous with its value in dollars. The American system of banking and currency is complicated by the issue by different authorities of several different types of paper money, Federal Reserve Notes, Gold Certificates, National Bank Notes, etc., regarding which the legal "cover" requirements vary. In most cases the principle of a proportionate reserve is followed, but the diversity of issues and of regulations renders it practically impossible to say, in general terms, what gold reserve is prescribed to maintain convertibility of the dollar, and considerable fluctuations in the note issue and in bank credit can take place without much change in the gold reserve.

The prescription by law of some definite proportion between the minimum gold reserve and the note issue has as its purpose to ensure the convertibility of the notes, but it has also, in Professor Cannan's words, "the absurd consequence that a bank subject to it must keep more than the minimum". To be on the safe side of the legal percentage, the bank of issue will keep a still larger percentage. In 1928, the average gold cover for most gold using countries was about 40% of the

note issue and sight liabilities of the banks of issue, while the legal minimum was 29·34%. With the greatly increased note issues which war and post-war finance had produced, the available stock of gold would have been insufficient to provide such a percentage "cover", were it not for the fact that gold no longer circulated as coins. Almost all monetary gold is now concentrated in the vaults of the various note-issuing central banks, and the withdrawal of gold from circulation is generally referred to as an "economy" in the use of gold.

§ 4. *The British post-war gold standard.*

The post-war world, in which the gold standard, slightly modified, was reintroduced, differed in some important respects from the pre-war world. In the first place, the course of commodity trade had changed. England's position as an exporting power was already under challenge before 1914, and the war strengthened the relative position of newer industrial countries, such as America, Japan, and the Dominions, far removed from the seat of war. As they caught up (often with the help of a tariff or bounty) with some British exporting industries it became necessary for Britain to develop other industries to provide employment for people who had been squeezed out of the declining industries. The heavy unemployment prior to the depression which began in 1929 was evidence of the difficulties involved in so huge a transfer of labour and capital. A problem of these proportions requires an appropriate monetary policy, and it is now widely believed that England's return to gold in 1925, at the pre-war parity of £1 = $4·866, rendered her industrial difficulties more acute. Before considering this view, we must notice another striking difference between the pre-war and

post-war world, namely, the redistribution of the world's gold stocks which took place between 1914 and 1924. In this period of ten years, the monetary gold stocks of the United States increased from $1,813,000,000 to $4,499,000,000. Of this increase about half arrived during the war years 1915-17, when America had an enormous excess of exports—chiefly to the European belligerents.

TABLE 6.
Monetary Gold of U.S.A.
$00,000,000

December.	Gold Stock.	Movement.	Addition since 1914.
1914	1·8		
1915	2·3	+0·5	0·5
1916	2·8	+0·5	1·0
1917	3·2	+0·4	1·4
1918	3·2	0	1·4
1919	3·0	−0·2	1·2
1920	2·9	−0·1	1·1
1921	3·7	+0·8	1·9
1922	3·9	+0·2	2·1
1923	4·2	+0·3	2·4
1924	4·5	+0·3	2·7
1925	4·4	−0·1	2·6
1926	4·5	+0·1	2·7
1927	4·4	−0·1	2·6
1928	4·1	−0·3	2·3
1929	4·3	+0·2	2·5

Source: League of Nations: *Selected Documents on the Distribution of Gold*, pp. 38-39.

Although the excess of exports continued in 1918 and 1919, America was now lending heavily to the Allies, to enable them to buy her exports, and she received no more gold. Indeed, until late in 1920 she lost a little gold, but the tide of gold movements soon turned again. This was the period of the great

inflations, and with the monetary future of Europe so uncertain, the still golden dollar seemed the best of all sanctuaries for "fleeing" capital. Thus liquid balances were transferred to New York, for short term loans, and this supplemented the foreign currencies acquired by the continuance of America's "favourable" trade balance. These liquid funds came to play a dominant role in the operation of the post-war monetary system. Offered for loan on short term, in view of the risk attached to investment in long term securities, they were liable to move from country to country in response to changes in the short term rate of interest, or in anticipation of exchange fluctuations. In the pre-war days the dominant causes of gold movements were changes in commodity trade and long term capital movements. The growth of international short term lending—"interest arbitrage" as some have called it—introduced a far greater degree of instability into the factors controlling the international distribution of gold, and we shall see how the sudden movement of such funds influenced the early stages of the 1929 depression and England's subsequent abandonment of the gold standard.

In the period immediately following 1920, the movement of funds was towards America, and gold was imported into that country. With inflation still proceeding in some countries, and conditions unsettled in others, it would have required a mighty expansion of credit in America to check the flow of gold. The Federal Reserve Board, however, wished to avoid such an expansion, and, for a time, deliberately restricted the growth of credit. This policy has usually been referred to as "the sterilization of gold". It has been defended on the grounds that it prevented the creation of so large a volume of credit as would require the

retention of the whole of the gold stock as a reserve, but it represented a departure from the recognized "rules of the gold standard". When England returned to gold, North America held 45% of the world's monetary gold stock, as compared with 24% in 1913. On the other hand, European countries now held, between them, only 35%; whereas in 1913 they had held 63% of the total.

TABLE 7.
Monetary Gold Stocks.
$000,000's.

	1913.	1925.	1929.
Europe	5,539	3,608	4,778
North America ..	2,086	4,625	4,435
Australia	198	279	185
World	8,773	10,232	11,179

Source: League of Nations: *Interim Report of the Gold Delegation*, p. 114.

Even allowing for the remarkable industrial developments in America during this period, it is clear that this redistribution of gold did not adjust the gold stocks to the relative reserve requirements of the countries, especially as the Federal Reserve System now enabled America to base a larger volume of credit upon any given gold reserve than before the war. With the gradual resumption of the gold standard, some countries would expect to obtain an addition to their stocks, which, in the absence of an unusually rapid increase in production, would have had to come from America.

The prospects of gold flowing into or out of a country, upon its return to the gold standard, depend largely upon the rate chosen for stabilization, and the

relationship between costs and prices in the country in question and in other countries with gold currencies. Given this relationship between costs and prices, any considerable rise in the exchange value of one country's currency weakens, at least temporarily, its competitive position as compared with the other countries. The expectation that England would return to gold drove up the exchange value of sterling to little below the parity of £1 = $4·866, and the final decision to return to gold at parity involved little further rise in the sterling exchange. But it seems probable that this slight rise, together with the considerable speculative rise which preceded it, "overvalued" sterling, in the sense that it was not accompanied by a similar increase in the internal purchasing power of the English pound. Other countries' costs and prices being the same, this appreciation of sterling in terms of the dollar meant that to retain their previous selling price abroad, British export industries must reduce their costs. Failing this, exports would decline, unless subsequently prices in other countries rose sufficiently for British industries to maintain their competitive position. American prices proved to be fairly stable, in fact, and Britain's exports fell sharply in value and in volume. The return to gold at the pre-war parity had intensified the difficulties of the export industries, and that meant not only heavy unemployment, but also a tendency for the export of gold. The sterling-dollar rate was generally a good deal nearer the gold export point than the gold import point during the period 1925-30, and the Bank of England "lost" £16,480,000 worth of gold. To prevent a still more rapid drain, the Bank rate was kept above the New York Bank rate until 1928. Thus throughout 1926, and until April, 1927, the Bank rate stood at 5%, and

then at $4\frac{1}{2}\%$ until early in 1929, when heavy exports of gold led to a rise to $5\frac{1}{2}\%$. But banking statistics show that there was no such contraction of credit as the "rules of the gold standard" required in such circumstances. The strain upon sterling, which this gold movement and Bank rate policy reflected, was probably strengthened by the maintenance of overseas lending on long term. Some economists consider this to be a chief cause of the weakness of sterling over the period in question, and suggest that in view of Britain's diminished strength in exporting, less should have been lent. But while it is true that a country's ability to lend abroad without exporting gold depends upon keeping exports of goods and services sufficiently in excess of imports to cover the sums lent, it is not certain that Britain could have exported as much as she did if she had not been lending so heavily abroad. Capital importing countries such as Australia would have had to take less of British and other exports if they had not been able to borrow abroad. It is not possible to determine exactly how important a factor in the situation England's long term lending was.

Others suggest that England should have "kept to the rules" of the gold standard when she returned to it, contracting credit and reducing costs, including wages. But further credit contraction seemed out of the question, with $1\frac{1}{4}$ million unemployed in the country. Moreover, the growth of trade union organization, together with the development of unemployment insurance, had strengthened the workers' opposition to wage reductions. With little prospect of making costs flexible, it seemed idle to advocate "keeping to the rules" of the gold standard. Why not choose a time, and a rate of exchange, at which the return to

gold would have involved less violent adjustments in wages?

It is easy to be wise after the event. In 1925 it was difficult to determine to what extent the recovery of the sterling exchange was merely speculative, and "overvalued" the pound. Moreover, it was thought that to return to gold at the old parity would regain for London her financial supremacy, which was somewhat threatened by New York. But the return to gold was not a return to normal, and six years later (1931) England again abandoned the gold standard.

§ 5. *France and U.S.A.*

In some ways France's experience has been the reverse of England's. When the former stabilized her currency, the exchange value of the franc had been driven down by speculators who expected it to fall further. Prices in France had risen less rapidly than the franc had fallen on the exchanges, and the rate chosen for stabilization "undervalued" the franc. This brought French exporters an advantage, just as the return to gold brought English exporters a disadvantage. Consequently France, many of whose industries had been re-equipped since the war, had less difficulty in creating a surplus of exports over imports. The foreign exchange thus acquired was supplemented by the funds of speculators who had transferred capital out of France (the flight from the franc) during the inflation. Although France used to lend abroad, to foreign countries and to her colonies, before the war, long term foreign loans were less attractive in the post-war decade, so that the funds acquired by foreign trade and by the return of capital had to be either invested at short term in foreign financial centres, or converted into gold for import into France. The Bank

of France seized this opportunity of strengthening its gold reserves, which, in 1926, were little more than half the total of the pre-war gold in circulation and in reserves. This importation of gold (1927-29) was regarded merely as a "return to normal" reserve requirements, and it was not accompanied by the rise in prices which, under the pre-war gold standard, usually accompanied the importation of gold. The note issue and bank deposits increased, but apparently this only counteracted the decline in the velocity of circulation, which had increased abnormally during the period of the flight from the currency. It is probable, too, that hoarding of currency by private individuals increased once stabilization was achieved. Prices having failed to rise, France continued to enjoy a strong exporting position, and to build up large foreign balances, portion of which were converted into gold on private account, and shipped to France. This gold in turn was exchanged for paper francs, but as the cheque system is not developed in France, it did not form the basis of a large credit expansion. A similar flow of gold into England would probably have led to a rise in prices, which would have checked the importation of gold by the mechanism we have explained.

Thus, while Great Britain returned to gold at a parity which, in view of the comparative rigidity of her costs, condemned her to a decline in her export trade and a drain of gold, France, on the contrary, returned to gold at a parity which, in view of the inelastic nature of her credit system, ensured her an expansion of her export trade, and an inflow of gold. Here was a situation which, independently of events in America, must lead to some further considerable redistribution of gold.

In America, after 1925, a peculiarly difficult problem of monetary management arose. The Federal Reserve Board was faced by speculative tendencies which might lead to a boom and a crash. The appropriate action to correct this would be, according to accepted principles, a higher rate of interest. But a higher rate of interest in America would attract liquid funds from other countries, and strengthen the tendency for gold to flow to America. The New York Federal Reserve Bank rate was raised from 3·5% to only 4% in January, 1926, and, apart from a reduction to 3·5% for four months from April, was held at 4% until August, 1927. The boom had turned out to be a mild one, and as there were tendencies to a depression in 1927, and England was faced by a renewed weakness of the pound, the New York Bank rate was reduced to 3·5%, and the Federal Reserve Banks began to expand credit by the purchase of securities. This checked the American recession, and eased the exchange situation. In the next year or two substantial overseas loans were floated in America, and this outflow of capital led to an export of gold, without opposition from the Federal Reserve authorities. This was a minor factor which facilitated France's return to gold, as described above. But, as business recovered and credit expanded in 1928 and 1929, stock exchange speculation gathered weight and, after trying to check the boom by secret warnings, the Federal Reserve Banks raised their discount rates. Interest rates in general rose, and this induced a further movement of funds to America and a renewal of gold imports in 1929 which at once constituted a gold drain from Europe, and negatived the Federal Reserve Board's attempt to check the expansion of credit in America.

The period up to 1929 was one of great prosperity in

the United States, yet it was at first not recognized as a boom. Usually a boom is accompanied by rising prices, but most of the available index-numbers showed comparatively stable prices. The explanation is to be found in the speed of technical progress in the post-war period, which lowered costs and, with stable selling prices, increased the profit margin for industry. In the absence of credit expansion, prices would have fallen appreciably for most products. Prices of some raw materials were already weak, owing to the extension of production by the help of improved methods, and a succession of good harvests. The price of wheat, for instance, was sustained in 1929 only by the holding of large stocks by the Canadian pools and the U.S. Farm Board. On the whole the comparative absence of price inflation probably misled the monetary authorities into underestimating the strength of the boom, and the action taken to check it was not drastic enough. Another complication arose from the attractiveness of speculation in stocks and shares. The attraction lay at first in the high profits which companies were making, and later in the consistent rise in the prices of securities. This rise in prices had become so rapid by 1929 that a moderate increase in the interest rate made little difference to a borrower buying securities with a view to a subsequent re-sale. In addition, the profits to be had from speculation discouraged foreign lending, and strengthened the tendency for gold to be imported. Up to 1929 Germany was only able to pay reparations by borrowing from abroad, especially from America, and America's speculative boom was one of the factors which prevented a continuation of this practice. In 1929 foreign loans floated in the United States were barely a quarter the value of those floated in 1928.

America's monetary policy has been criticized from two viewpoints. On the one hand it has been said that the gold imported into America was "sterilized"; on the other, that credit should not have been expanded as rapidly in the years of prosperity. Obviously both criticisms cannot be applicable to one and the same period; sterilization of gold imports implies a failure to expand the volume of credit. As we have seen, this was possibly true of the period up to 1926, but not after that year. From 1928 the situation developed features which cast some doubt on the efficacy of the "rules of the gold standard". The way to check imports of gold, according to these "rules", is to initiate a credit expansion, which raises prices and increases the demand for foreign currencies. But an expansion of credit may lead to a speculative boom. And with a large volume of liquid funds ready to move round the world in search of profits, a speculative boom may attract gold imports. Thus observance of the "rules" appears to produce effects in the modern world, with its interest arbitrage, the reverse of those expected from pre-war experience. But this may only be the case when action to check a boom is postponed too long. If credit had been contracted earlier in U.S.A., for instance, in 1928 when America was exporting gold, the subsequent gold imports would probably not have reached such large dimensions, for the speculative boom would have ended sooner. It should also be noticed that, according to the "rules of the gold standard", a greater credit expansion would be required to prevent gold imports from Great Britain into America, so long as Great Britain did not help to check them by contracting credit. Thus it may be said that Great Britain's failure to contract credit after 1925 encouraged the American expansion of credit to

heights which renewed the drain on Europe's gold, instead of checking it, and finally forced European central banks to raise their discount rates in 1929.

On one aspect of American policy, however, there is little room for doubt. For European countries committed to pay huge sums of interest and contributions towards the repayment of war debts, the only media of payment were goods, services, or gold. As long as Americans lent large sums abroad, the net payment which must be made to America was less. The appetite of Americans for travel helped to swell the payment of services, but payment in goods was obstructed by America's policy of high protection. Once America's overseas lendings were seriously reduced, it became increasingly difficult for European nations to make their annual war debt payments without an export of gold from Europe to America.

§ 6. *The abandonment of the post-war gold standard.*

The drain of gold from Europe in 1929 was slightly relieved by the difficulties of other parts of the world, such as Argentina and Australia, where a fall in export values and a reduction in borrowing were leading to a loss of gold. Nevertheless, Germany exported gold heavily in the second quarter of 1929, and Great Britain in the following quarter. The strain on these and some other European nations' gold reserves was accentuated by France's continued gold imports. In the first nine months of 1929 she had imported almost as much gold as America. The other countries' only defence appeared to be to raise their interest rates. The Bank of England had already raised its rate from 4½% to 5½% in January, 1929, and in September it raised the rate to 6½%. In October came the panic on the New York Stock Exchange. Various expla-

nations have been offered for this breaking of the speculative boom. Profits were already declining in many industries before the reaction in share prices, and no doubt such a reaction was bound to come. But it is possible that the rise in European bank rates, by checking the movement of funds to America, was one of the factors which initiated the turn downwards. The stock exchange crash interrupted the flow of gold from Europe, and in the fourth quarter of 1929, America exported gold. In this quarter, too, Argentina and Australia made their largest shipments for the year, and Great Britain, despite further gold imports by France, regained about 43% of what she had lost in the third quarter. With heavy unemployment in England, a Bank rate of 6½% was considered depressingly high, and it was reduced by ½% intervals down to 3% in May, 1930. Gold continued to flow in until May, when gold exports recommenced. In the earlier part of 1930 France's gold imports were considerably smaller, and Australia, Brazil, and Japan were exporting large sums to adjust their "balances of payments". It was these movements alone which enabled Great Britain to import gold in this period, for the movement towards America had set in again more strongly than ever.

In the second half of 1930, gold imports into France were renewed on a still larger scale, and England had to face further withdrawals. But this did not lead to a credit contraction: the "rules of the gold standard" seemed impracticable when unemployment was already so acute. With low rates ruling in other countries, the Bank of England lowered its rate in May, 1931, to 2½%. At this point, the Austrian *Creditanstalt Bank* failed, weakened by the deepening depression. The panic spread to Germany, where already in September,

1930, there had been a bank run. President Hoover proposed a year's moratorium of reparations and war debts in June, but runs on German banks continued. British banks were involved as they had lent heavily to Germany and other central European countries, and there seemed little likelihood of these loans being repaid in the near future. Foreigners began to doubt whether London was a safe place to invest their funds. Would the banking crisis spread to England? The Bank of England's gold reserve fell in nine days by some £25,000,000. Moreover, the "May Committee" on National Expenditure reported at the end of July and criticized severely the state of England's public finances, predicting a budget deficit of £120,000,000. Although this estimate referred to 1932-33, not the year 1931-32 which was just beginning, and although it allowed for a payment of over £50,000,000 for debt redemption, it was popularly accepted as a statement of the actual deficit at the time of publication. The May Committee urged a plan of economies, with civil service salary reductions and a reduction of the dole. Following a change in Government, a start was made towards balancing the budget. But a "flight from the pound" had already developed, despite successive rises in the Bank rate, which brought it to the moderate level of 4½%. The Bank of England tried to check the drain of gold by borrowing £50,000,000 from France and America, and the British Government raised another £80,000,000 abroad. Although this enabled the Bank to support the sterling exchange, the money was soon exhausted, and the Bank of England reported to the Government in September that "it would be impossible to meet the demand for gold". On September 21, England abandoned the gold standard. Sterling immediately fell in value on the foreign

exchanges, and by December, £1 was worth only $3·372.

Whereas in 1914, England left gold because the observance of the "rules of the gold standard" was incompatible with war finance by inflation, in 1931 she left gold because the deflation which would have been required, to observe the "rules of the gold standard", was considered to involve too great a cost. It was popularly expected in countries which had suffered from extreme inflation, that England's abandonment of the gold standard would be followed by soaring commodity prices and all the evils of inflation. But in fact prices remained steady in England; the suspension of gold was not a prelude to inflation but a guard against deflation.

§ 7. *Competitive currency depreciation.*

England's departure from gold had widespread effects in other countries. A few countries had already left gold, such as Australia and Argentina (both in December, 1929) each a primary producing debtor country. Many others now followed England's example. Some countries which had for some time been losing gold could now suspend gold exports without serious loss of prestige, while others found themselves placed at a competitive disadvantage by the depreciation of sterling. England could now quote lower prices for her exports, without having reduced the cost of production. This meant that her foreign competitors had to choose between cutting their costs to reduce selling prices, and checkmating English exporters by tariffs and other restrictions, or by depreciating their own currencies. Similarly countries from which England used to import goods were at a disadvantage so long as they stayed on gold, in that their usual prices, plus exchange, represented consider-

able price increases in the English market. For one reason or another, fourteen countries followed England off gold in 1931, and eleven more in 1932. South Africa was the last British Dominion to abandon gold (December, 1932).

In all these countries, the price of gold rose, as the currency depreciated on the exchanges. This had some interesting results. One was the sale of old gold trinkets, and the dis-hoarding of gold coin. There has grown up quite an active business for the purchase and re-sale of gold, and some addition has been made in this way to the world's monetary gold. In particular the high price of gold led to a sale of hoarded gold in India, and this undoubtedly strengthened England's position. Another effect was the stimulation of gold production, and a boom in gold mining shares.

Once free from the limitations of gold points, the exchanges could vary in response to the supply of and demand for any currency on the foreign exchanges. The effects of such variations on international trade were so considerable that some countries are alleged to have set out to control the movement of the exchanges with a view to retaining or increasing competitive advantages in international trade. For instance, when New Zealand brought its currency down in value to equality with the Australian pound, Denmark immediately brought about a similar depreciation, lest she lose part of the English market to her distant competitor. This is called "competitive exchange depreciation", and may be distinguished from exchange depreciation due to inflation within a country, to deflation in other countries, or to speculation. This distinction cannot always be maintained, however, for inflationary depreciation often brings competitive advantages, and deliberate exchange

depreciation may stimulate inflation within a country. Although Japan's exporting position has been improved by the fall of the *yen*, it is difficult to determine to what extent there has been deliberate depreciation of its exchange value.

In 1932 the British Government set up the "British Exchange Equalization Fund", because the value of the pound sterling was rising again from the low figure of about $3·50 to which it had fallen in 1931. This rise in sterling was due largely to the return of funds which had fled during the panic. While this was welcomed by the "City" of London as a sign of renewed confidence in London as a financial centre, it represented a worsening of the competitive position of Britain's export industries. It was decided therefore to set up the Exchange Equalization Fund, to sell sterling for foreign currencies whenever sterling was showing a tendency to rise; this would keep down the value of the pound. On the other hand, the foreign currencies thus acquired could be used to buy sterling if its value tended to fall too far. The money for these operations was raised by an internal loan in the form of Treasury bills.[2] Some economists hope that this type of operation may become a permanent one. It is no new idea, for something similar was suggested in England a hundred years ago. Early in 1933 the United States, too, abandoned the gold standard. According to ordinary notions as to the reserve requirements of a country on the gold standard, America need not have left gold. Her gold stocks were quite adequate for any external drain which might occur. But the failure of many banks led to currency hoarding, and to counteract this and gold withdrawals by European owners of liquid funds on short term loan

[2] Treasury Bills are explained on pages 279-80.

in America, various measures were enacted, making possible a considerable expansion of credit by the Federal Reserve Banks. This could not, however, save many small banks from closing, and panic led to bank runs all over the United States. In March the Government imposed an embargo on exports of gold and silver, and prohibited gold hoarding. The avowed policy of the United States was to raise prices, and the President was authorized to fix the weight of the gold dollar by proclamation, but it was not to be reduced to below 50% of its previous weight. Since the embargo on gold exports meant the suspension of the gold standard, the weight of the dollar was of little importance in itself; the future course of the dollar would be determined by its supply and demand on the foreign exchanges. The President had been vested with wide powers as regards monetary policy, and it was impossible to predict what use he would make of them. Consequently the dollar movements on the exchanges were speculative, and influenced by psychological factors. It was known that some sections in America wanted inflation, while others were opposed to it, and the dollar responded one way or the other to every new rumour and announcement of positive action by the United States Government. By May the dollar had fallen from \$3·57 to \$3·93 = £1.

The World Economic Conference met in June, 1933, and it was hoped that some agreement might be reached to check the fluctuation of exchanges. The countries still on gold urged the recognition of the need of returning to the gold standard as soon as possible, while another group of countries, whose exchanges, although depreciated with sterling, appeared to have settled at a fairly stable level, were in favour of keeping the *status quo*. The members of

the British Empire had already expressed their desire for stability of sterling. In June President Roosevelt announced, however, that the important thing was to raise prices rather than to stabilize the exchanges; and early in July the United States stated that in its attempts to control American commodity prices, the Government had no immediate concern with "the value of the dollar in terms of foreign currencies." Naturally the value of the dollar fell, and in July it averaged $4·65 to £1. As the dollar exchange depreciated, prices in America rose, but towards the end of July there was a reaction, the dollar rising on the exchanges and prices slipping back. These two movements seemed to many Americans to be causally associated, and various groups clamoured for inflation. In August, 1933, the Treasury had set up a free gold market, buying and selling gold at ruling world prices. That is, when the dollar fell relatively to gold currencies, the price of gold in dollars rose proportionately. The Government decided in October to raise the price *above* the ruling world price. Nobody would buy gold from the Government at the higher price, but everybody would want to sell to it rather than to other countries. This policy could be expected to achieve two things: firstly it would attract gold to the United States, and secondly it would diminish the value of the dollar in terms of gold currencies. Whenever the American Government's price rose above the world price in terms of dollars at the ruling exchange rate, it would pay anybody to buy other currencies, to convert them into gold, and to sell the gold to America for more dollars than the foreign currencies had cost. This involved sales of the dollar for other currencies, and drove down its exchange value. Quite apart from these operations, speculators could be expected to sell

dollars whenever a rise in the price of gold was announced. This policy reduced the value of the dollar (in sterling) as low as $5·40 in November, 1933, although it was to appreciate in terms of sterling in 1934.

Apparently it was hoped that this would lead to a renewed rise of commodity prices in America, but exchange depreciation, unless supported by credit expansion within the country, cannot raise prices generally. Credit expansion was also part of the American plan, but by November opposition to inflation became more powerfully organized, and early in 1934 the United States virtually returned to the gold standard, or at least to a modified form of it. The export of gold *to foreign central banks* was again permitted, and the price at which gold would be bought and sold by the Treasury was fixed at $35 per fine ounce, giving the gold dollar a weight of 15 $^{5}/_{21}$ grains of a standard fineness of nine-tenths. Since the dollar originally contained 25·8 grains, this represented a considerable "devaluation".

This marked the end of America's competitive currency depreciation, for it was decided to set up an exchange stabilization fund to be used to prevent violent exchange fluctuations. In any case, so long as the price of gold is fixed officially, and the export of gold to central banks is allowed, the exchanges cannot vary in terms of gold currencies beyond the limits imposed by the new gold points. But in terms of sterling, and other currencies which are off the gold standard, the value of the dollar and of other gold currencies can still fluctuate. If the United States attempts to prevent such fluctuations by buying or selling dollars, it will be supporting or, alternatively, depressing the value of all gold currencies in terms of

currencies off gold. Were the countries off gold intent upon further depreciation, the United States acting alone would find it difficult to prevent this. Since the greater proportion of the countries off gold are endeavouring to retain a fixed ratio with sterling, variations in the value of sterling in terms of gold currencies are likely to be followed by similar variations in the exchanges of the so-called "sterling block". Despite the independent course of the Japanese yen, the concept of "exchange stability" came to be associated, in 1934, with the idea of the "stability of sterling".

In the course of that year the value of sterling in terms of French francs gradually declined, and the fall continued in the first quarter of 1935. Although not comparable with the depreciation of 1931-32, this movement helped to draw renewed attention to the different records of the countries of the gold block and the sterling block, respectively, in the matter of general economic recovery. While Great Britain and other members of the sterling block reported falling unemployment and improving public finances, most members of the gold block continued to announce new measures "for the defence of the currency", reducing wages and increasing taxes. Resistance to such measures led, in Belgium, to a change of government, and to the decision, at the end of March, 1935, to devalue the belga (which is five Belgian francs) by not more than 30%. A devaluation of 28%, which is announced to be the Government's objective, leaves the belga less depreciated than sterling, in terms of gold. Although the gold standard is to be retained in Belgium, this devaluation marks a defection from the principles of the gold block, and it remains to be seen whether other members of the gold block can

resist the temptation to follow Belgium's example.

A most uncertain factor is the policy of Germany. Her currency has been kept nominally on the gold standard, but only by a remarkable series of restrictions upon foreign exchange dealings, and by default, first in respect of reparations, and then in respect of interest on foreign loans. After the experience of inflation up to 1924, it seemed probable that for Germany to abandon gold would be to create a panic and flight from the mark, and this the Government wanted to prevent at all costs. It appears to be inevitable that Germany will sooner or later leave the gold standard and allow her currency to depreciate at least on the foreign exchanges, but it is not possible to predict what effect this would have upon the stability of other currencies. The competitive position of German exporters would not be improved by the *whole* of the fall in the mark, because since October, 1933, an ingenious method of subsidizing exports at the expense of foreign bondholders has been in force. The bondholders, except for a period when Germany defaulted during 1934, were receiving 30% of their interest in cash, and the rest in "scrip"—a document representing a promise to pay. This scrip could be converted into cash immediately for portion of its value (50% at first, and later 67%) at the German "Gold Discount Bank", which in turn sold the scrip, thus acquired, to German exporters at a slightly higher price. The German exporters could then cash the scrip for its full value at the "Conversion Office", and the margin of this above the price the exporters paid for the scrip formed a subsidy to cover part at least of their losses. Thus exporters were relieved of some of the burden involved in selling to countries whose currency was depreciated as compared with the gold

mark. It will be noticed that the English bondholders, for instance, do not lose as much in pounds as at first appears, since so long as Germany stays on gold, the full value of the interest payments calculated in marks represents considerably more in sterling. Naturally, if no interest is being paid, this form of subsidy is not available to exporters. In any case if Germany left gold the external depreciation of the mark would improve somewhat the competitive position of her exporters, but whether their competition would be strong enough to induce further competitive exchange depreciation elsewhere cannot safely be predicted.

Even France has been shaken by the devaluation of the belga, and continued deficits in public finance, and although successive governments announce their intention not to devalue, it appears likely that devaluation cannot be indefinitely postponed.

In the above account, passing mention only has been made of Australia; this chapter has sketched the background of monetary instability against which we may see more clearly the problems of Australian policy.

CHAPTER IX

THE AUSTRALIAN MONETARY SYSTEM

§ 1. *Before Federation.*

Like all others, the Australian system has its roots in the past, and the handling of modern problems is influenced both by the form of the monetary institutions previously built up, and by Australia's experience of varying economic conditions. In the earliest days incomes consisted of rations, and the wages of assigned convicts and subsequently of free workers were paid in kind: provisions and rum. The latter became the first money of any importance and then for twenty years most wages were paid in this peculiar medium of exchange. It was not a good form of money, because those who held resources in this liquid form were under a strong temptation to consume it. Another early form of money was the Government receipt, given in exchange for locally grown wheat, and "convertible" into a bill on the British Treasury. Such receipts passed from hand to hand like bank notes. Apart from these there were such coins as found their way into the colony, in particular the Spanish dollar, a standard silver coin which was current in many parts of the world and was worth about five shillings sterling. But so long as the export trade was inadequate to pay for imports, it was difficult to keep any considerable quantity of silver dollars in New South

Wales. They flowed out, just as gold may flow out of a gold standard country. An attempt to prevent the export of dollars was the occasion of the first Australian essay in coinage. The Government in 1813 had small round pieces cut out of the middle of a quantity of dollars, and the words *Five Shillings* were stamped upon these "holey dollars", although their silver content was now worth less than five shillings. The piece cut out from the centre, called the "dump", was declared equal to 15 pence in English currency. These coins were legal tender in the colony, and were used in Government transactions. Every two years they were to be redeemed by bills on London. But private individuals took to making their own dumps and holey dollars from ordinary Spanish dollars, gaining 25% on each, and counterfeits were plentiful.

As trade increased, settlers' promissory notes began to circulate, and in 1812 the issue of notes by traders was officially sanctioned. These were at first convertible (in a certain quantity) into bills on London —as long as the trader had money in England—and later were issued in terms of Spanish dollars. There was much opportunity for forgery and fraud, and in any case the circulation of such notes was limited by the reputation of the individual or firm issuing them. In 1816 restrictions were placed upon the issue of private notes, and in 1817 the Bank of New South Wales was opened. After a couple of years its notes, ranging in value from 2/6 to £20, had become an important portion of the money in circulation. The bank had been organized as a Chartered Company, and for some time its legal position was in dispute, the renewal of its charter in 1824 being at one stage declared invalid. A run, imperilling the bank's solvency, was met by a Government loan, and after

reorganization as a partnership, it came through its difficulties. This bank's early success had led to the founding of a competitor, the Bank of Australia, in 1826, and in the thirties and forties other banks appeared.

The existence of a satisfactory paper currency made it possible to abolish the holey dollar and the dump in New South Wales, which simplified the currency considerably. Moreover, the holey dollar's nominal value could hardly be maintained. The gold price of silver had fallen, so that the original Spanish dollar no longer contained five shillings worth of silver in terms of sterling. In 1823 the sterling value of the Spanish dollar was 4/4; and with the holey dollar and the dump, it had already come to circulate at a discount in terms of English silver coins. Although abolished in New South Wales in 1829, in Tasmania the holey dollars continued to circulate, but at three-quarters the value of the Spanish dollars, and the dumps as "quarter dollars". The Spanish dollar itself was officially valued at 4/4 in 1831 and later at 4/-.

The opening of the goldfields in 1851 changed the face of the Australian monetary problem. The standard metal of sterling currency was now produced within Australia, and, indeed, became an article of export, just like wool or coal. The diggers disposed of their gold to the banks or to gold dealers in return, usually, for bank notes or coins. The gold was then sent to London, where it could be minted or exchanged for credits in London or British token coins. The banks or gold dealers usually paid only about 70/- per ounce for the crude gold, while the London price for fine gold was about 85/-. Thus the gold buyers were making a good profit on their transactions. The British money could then be brought back to Australia if desired.

Australia was, therefore, exporting crude gold and importing some sovereigns and other British coins, just as to-day she exports wool and imports some woollen goods. But the double voyage took over six months, and in 1851, although there was plenty of crude gold in Australia, the banks in South Australia ran short of gold coins. They were not willing to increase their note issue, since their reserve of legal tender money could not include nuggets or gold dust. To meet this problem the South Australian Government passed the Bullion Act of 1852, making assayed gold legal tender by weight, and setting up an Assay Office in Adelaide, to mill, assay, and stamp gold into "tokens". The rate fixed was 71/- per ounce of gold. This was nothing more nor less than coining, and disapproval was expressed in England since only the Royal Mint had the right to perform this function. But sovereigns arrived from London, the tokens in circulation were withdrawn, the Act was allowed to expire, and the Assay Office was closed. In Sydney, however, it was suggested that a Mint should be definitely established. Gold producers hoped to get a better price for their gold, bankers knew they would be freed from the danger of a scarcity of cash amidst plenty of gold, and the shipping of gold to London and back was obviously unnecessary. Although the Colonial Office was at first opposed to the idea, it finally gave way, and a branch of the Royal Mint was established in Sydney in April, 1855. It was to coin sovereigns which were to be legal tender throughout the Australian colonies, but not elsewhere. The Victorian Government, jealous of Sydney's Mint, seized upon the limited legal tender of the sovereigns and made their export from the State subject to the existing export duty on bullion. Moreover, it refused to pro-

claim the Sydney sovereigns as legal tender in Victoria. But the coins were accepted at their face value by traders, and they tended to displace in circulation the English sovereigns, which could be exported free of duty. This illustrates the fact that money need not be declared legal tender to serve as a medium of exchange. In 1857 the actual situation was recognized by the proclamation of the Sydney sovereigns as legal tender in Victoria, and in 1863 the British Government made them legal tender throughout the Empire. This was only logical, since they were standard coins, of the same weight and fineness as other British gold coins. Later, additional Mints were opened at Melbourne and Perth. The establishment of a Mint also made possible an issue of token coins, which were certainly needed. Shortage of small change had led business houses to issue their own tokens as early as 1852. But these were so numerous and so easily counterfeited as to be unsatisfactory. No official move was made, however, until 1868, when bronze pennies were put into circulation, and soon drove out the privately issued tokens. Silver token coins were first issued in 1898.

Since Australia has become a gold-producing country, gold movements have not quite the same significance as in the case of Great Britain. For Australia's stock of monetary gold to remain constant, she must export all of her current production, except the relatively small proportion which is used industrially, for jewellery and similar purposes. Only if exports exceed production can we expect in Australia all the usual accompaniments of an export of gold from a country which does not produce gold. On the other hand, conditions which would lead Great Britain to import gold rarely cause a net import of gold into

Australia; she merely retains a larger proportion of her current production. When the gold standard is freely operating in Australia, stability of the exchanges is maintained, as a rule, not by imports and exports of gold, but by variations in exports, which involve opposite variations in the quantity of "gold retained".

If a gold-producing country has a steady annual production of gold, the balance of trade comes to be adjusted to allow the export of a fairly constant quantity of the metal. In the absence of disturbing factors, such as capital imports and interest payments, imports of merchandise will normally exceed exports by a figure approaching the annual gold production. If the expansion of trade or growth of population requires a greater stock of monetary gold, some of the production will be retained. Fluctuations in imports or exports, or in capital movements may cause the export gold to fluctuate above or below annual production. On the other hand, any considerable variation in gold production will react upon prices and business as would an import or export of gold in Great Britain, and this by stimulating or checking imports relatively to exports, will lead to a greater or smaller export of gold, according to the direction of the change in production. This is illustrated by the remarkable increase in the excess of commodity imports during the fifties, but in other periods the influence of capital movements upon the balance of trade often swamped the influence of the smaller variations of gold production.

The developments described above laid the foundations of the monetary system which was not seriously altered until after Federation. The coins in circulation consisted of gold sovereigns and half-

sovereigns and token coins of silver and bronze. Some of the token coins had been minted in Australia, and others in Great Britain, but to the man in the street they were not distinguishable from each other on that account. There was no central bank, and no Government paper money, except in Queensland, where notes were issued during the crisis of 1893. The trading banks issued notes, which served as cash, although they were not recognized as legal tender, except for a short period in 1893 in New South Wales. In that State a bank could issue notes in excess of its paid-up capital, only if they were backed by coin or bullion in excess of its holding of gold and bullion for the bank's ordinary operations. The latter included the payment of cheques which, from the beginnings of the Bank of New South Wales, had been an additional form of "money", and had come to be regarded as a normal feature of the Australian monetary system. The first clearing house was established in Melbourne in 1868, although Sydney banks did not follow suit until 1895. Thus if Sydney had the first Mint, Melbourne had the first clearing house.

The greatest difficulties of the banking system prior to Federation came with the crisis of 1893, when fifteen banks closed their doors. Like most crises, this one followed a boom, marked by heavy imports of capital and feverish land speculation, no less than 41 land and finance companies failing in 1891 and 1892. The slump was initiated partly by the collapse of the land boom and partly, as in 1929, by a decline in export prices, and the suspension of overseas lending. The latter had largely taken the form of bank deposits from England and especially from Scotland.

The crisis influenced the subsequent policy, both of

the banks which managed to stay open, and the dozen which, after reorganization, were able to resume business, for since 1893 the banks have invested less of their funds in land, and until quite recently had not allowed their cash reserve ratio to fall as low as it was in the nineties. The boom and subsequent crisis reacted also upon the banking structure. In 1850 there were ten banks in existence. From 1850 to 1888 33 new banks had been established; some as a natural consequence of the gold discoveries in the fifties, and others under the stimulus of boom conditions in the eighties. Some of them were little more than speculation companies, and several failed before 1893. In that year the number of banks was 26. The number of branches, too, had increased from 9 in 1850 to 1470 in 1893. Although bankers discussed the desirability of restricting their branch banking to a single State rather than endeavouring to cover the whole of Australia, there were no limitations imposed on branch banking by the Governments, as there are in the United States. At this period some banks did confine their activities to one or two States, for example, the Commercial Banking Company of Sydney, the National Bank of Tasmania, and the Western Australian Bank. The Bank of New South Wales in 1889 had somewhat wider interests, with 89 branches in the home State, 29 in Queensland, 30 in Victoria (which were parts of New South Wales when the bank was established), 2 in South Australia, 2 in Western Australia, and 31 in New Zealand. The Bank of Australasia, and the Union Bank of Australia operated in all six States.

Only three of the banks which had to suspend payments in 1893 did not open their doors again; but of the remaining twelve, some were in difficulties for a

long time, and had to ask their depositors to accept an extended period of repayment. Naturally, while all the banks suffered, those which had remained open throughout the crisis gained, relatively to the others, in the favour of depositors. This prepared the ground for unequal development which probably facilitated subsequent amalgamations, but in the years immediately following 1893 problems of reconstruction stood in the way of the latter. By Federation, however, the reconstructed banks had either met their liabilities, or were progressively paying back their depositors under various schemes. Although recovery from the depression had been very slow, the discovery of gold in Western Australia made the outlook far brighter.

There are one or two other matters for comment in the years before Federation. One is the establishment of banks with their head offices in England. Seven such banks were founded during the period 1835 to 1852. Of these, three are still in existence, the Bank of Australasia (the earliest), the Union Bank of Australia, Limited (1837), and the English, Scottish, and Australian Bank, Limited (1852). Of the others, one failed in 1850; another in 1884; a third was absorbed by the Union Bank in 1892; while the other was taken over by the "E., S. and A." in 1921. Although the English banks may have some Australian shareholders, and the indigenous Australian banks some English shareholders, the former have on occasion followed a somewhat different policy from that of their Australian competitors.

While there has been, all along, competition between the individual banks, there has also been joint action. An association known as the Associated Banks was set up in Victoria and informal groupings have been

made in some other States, but not in New South Wales.

Although ordinary "trading" banks occupied the centre of the picture before Federation, the savings banks must not be ignored. The first to be established was the Savings Bank of New South Wales, in 1832. This savings bank was controlled by trustees; and similar institutions were set up in Victoria (1842), South Australia (1848), and Tasmania, having as their declared objects the encouragement of thrift in the working classes, and the provision of a safe investment for the funds of friendly societies and the like. In addition, the State Governments established Post-Office banks in Western Australia (1864), Victoria (1865), Queensland (1865), Tasmania and New South Wales (1871). Since the trustees of the former group were generally appointed by the Government, and all savings banks were to a greater or less extent under State control, they made rapid progress in public favour and in the thirty years prior to Federation their deposits and depositors increased to eight times the 1871 figures; and their total deposits were approaching one-third of the total trading banks' deposits at the turn of the century. Although the difficulties of 1892-93 affected savings banks, too, they came through them with enhanced prestige. The existence side by side of trustee banks supervised by the Government and savings banks run by the Government meant "unnecessary" competition and duplication of staff, and even before Federation there was a movement towards amalgamation. In Victoria the savings banks were merged in 1897, and a similar proposal was under discussion in New South Wales, although it was not realized until 1914.

§ 2. *Commonwealth Treasury notes and the Commonwealth Bank.*

From some points of view, Federation is an arbitrary division of periods, since the further development of cheques and the amalgamation of individual banks into larger units would have continued in the separate States, without Federation. But in other matters it paved the way for important changes, which, as it turned out, facilitated war-time inflation and led later to the development of central banking.

The first step of the Commonwealth Government in monetary policy was to provide for a specifically Australian coinage, by an Act of 1909. Sovereigns and half-sovereigns were still equal in weight and fineness to those minted in England, and the only important change was in the design of the copper coins issued first in 1910 and of the silver coins issued first in 1916. English coins still circulated in Australia, but Australian tokens were not accepted in England. Australian Mints do not issue half-crowns, which are widely used in England; on the other hand threepences are more popular, and more numerous in Australia. These changes in the coinage, however, were not comparable in importance with subsequent changes in the note issue, and the diminished activities of the Mints are reflected in the closing of the Sydney Mint in 1926.

The Federal Constitution empowered the Commonwealth to make laws with respect not only to the coinage, but also to banking and the issue of paper money, and in 1910 this power was exercised to provide an issue of paper money by the Federal Treasury. The notes issued by the trading banks were subjected to a tax of 10% per annum on their face value, and the Treasury was empowered to issue notes through

the "Australian Notes Board". Against these notes a reserve in gold equal to 25% of their value up to £7,000,000 and thereafter pound for pound, was to be kept by the Treasury, and the notes were convertible into gold coin on demand. In 1911 legislation was passed to establish the Commonwealth Bank to carry on the general business of banking, but without power to issue bank notes. The Act placed the control of the Bank in the hands of a Governor and Deputy-Governor and made the Commonwealth Government responsible for the payment of all moneys due by the Bank. The capital of the Bank was to be £1,000,000, raised by the issue of debentures, but the Federal Treasurer could make advances for administrative purposes, and it was on such an advance that the Bank established its first office in 1912. To get going a bank requires money to pay its employees, and cash for its till. In the absence of capital, deposits must precede advances, since the deposits are needed to acquire a cash reserve. The Act provided for the establishment of a Savings Bank Department, and this commenced operations first. Cash to carry on with came also from the transfer of the Commonwealth Government's accounts from the private banks, and some of the State Governments, too (but not New South Wales nor Victoria) have adopted the habit of banking with the Commonwealth Bank. During the war it kept the special accounts of soldiers and handled the issue of war loans. Although the first year's operations resulted in losses, thereafter the Bank earned sufficient profits to render it unnecessary to raise its authorized capital by debentures.[1] The Act provided that half the profits was to be retained as a reserve, and the remainder was to be used to repay

[1] The Savings Bank Department made a profit from the first.

Treasury advances, and to redeem debentures issued by the Bank, and any excess was to be handed to the Treasury for the redemption of Commonwealth debts.

The Bank was established by a Labour Government, and a large section of the party viewed its chief purpose as competition with the trading banks, just as other State enterprises have, under Labour Governments, attempted to oust private business by its own method of competition plus a little Governmental discrimination. Although the name of the first Governor of the Bank has come to be associated with this ideal in the speeches of critics of the Bank's later policy, Sir Denison Miller himself stated, soon after his appointment, that he desired the Commonwealth Bank to become like the Bank of England, to be able to support the other banks in case of an emergency. From our earlier discussion, however, it should be clear that such a development could not take place as long as the Bank did not control the note issue, and no move in this direction was made until after the war. The only amendment to the Bank Act (1914) was to enable arrangements to be made to take over other trading banks or State savings banks, and to increase the nominal capital of the Commonwealth Bank to £10,000,000.

As in other countries, the war provided an occasion for currency and credit inflation. In 1911 the law had been amended to abolish the limit of £7,000,000 beyond which the notes were to be backed pound for pound by gold; any amount could now be issued as long as a gold reserve of 25% was maintained. In 1912 and 1913 the Commonwealth note issue varied from £9 million to £10 million. On the eve of the outbreak of war (June, 1914) it stood at £9·6 million, and the gold reserve at £4·1 million; the trading banks'

notes had almost all been retired from circulation in Australia, although they were still current in New Zealand. Following the declaration of war the Australian Government, like the British Government, took steps to prevent the export of gold and to strengthen the gold holdings of the note-issuing authority. The Mints ceased coining sovereigns for the public; gold could be exported only under licence from the Treasury; and the "cashing" of notes was discouraged by the Treasury. New gold produced was bought by the Treasury with notes, and the trading banks were induced to hand over £10 million of their gold reserves in exchange for notes. As in England, the public was also encouraged to pay in gold coins, accepting notes in return. The expansion of the note issue involved in these latter transactions did not itself increase the volume of cash above what it would have been; but since the notes issued in this connection were backed pound for pound by gold, the gold thus acquired made legally possible a *further* increase in the note issue, which was a net addition to the cash in circulation. This came about as follows: The war meant heavier expenses for all the Australian Governments, but especially for the Commonwealth Government; it also made it extremely difficult for the State Governments to borrow in London for ordinary loan expenditure on public works. The Commonwealth Government raised some money in London for war purposes, but before long had to have recourse to the Australian market. Here it found itself in competition with the State Governments' attempts to borrow for public works. The solution which presented itself was for the Commonwealth Treasury to make advances to the States by printing and issuing extra notes, and for the State Governments to promise not to borrow other-

wise for a period of twelve months. This left the ordinary loan market in Australia open to the Commonwealth Government.[2] But it also involved an addition to the note issue. The "investments" of the Notes Board, held as assets against the notes not backed, pound for pound, by gold, included in April, 1915, £6·6 million, a first instalment of the loans to the States.

By June, 1915, the value of State securities and Treasury bills held by the Board stood at £13·8 million and the next year at £20·6 million. In 1919 another £1 million was added. For most of the war period the Board held a little over £8 million worth of Commonwealth bonds and bills; this rose to £10 million in 1918, but fell to £7·5 million in 1919. The only other channel of increasing the fiduciary (uncovered) note issue which was utilized was to deposit notes with banks. In June, 1915, the Notes Board had £0·2 million on deposit with sundry banks, in 1917 £1·7 million, in 1918 £6·1 million, and in 1919 £7·0 million. This latter procedure had somewhat similar effects to the loans to the States, since the deposits went directly to improve the banks' cash reserves. The loans to the States were spent on public works, and thus passed into the hands of wage earners and others. But except in as far as their being spent led, directly or indirectly, to greater business activity or higher prices such as would require larger holdings of cash by the public, these notes, too, sooner or later found their way into the banks' cash reserves.

In June, 1914, the trading banks held £41·4 million in coin, bullion, and notes; the public's holding of gold is estimated at between £5·7 million and £7·8 million

[2] The Queensland Government stood out of this agreement, however.

and of notes at £4·8 million; ignoring token coins the public probably held, therefore, about £11·6 million in cash. Two years later the banks' cash reserve stood at £58·3 million, and the public held £13·3 million in notes. Most of the notes lent to the States had already been deposited with the banks. With a constant reserve ratio of cash to deposits this would have involved a considerable expansion of credit, but, perhaps in view of the uncertainties of war, the banks allowed their reserve ratio of cash to rise from 26% to 34% of deposits. Advances increased by only £17·8 million, a figure almost equal to the increase in cash reserves. Although 1915 brought heavy unemployment, discouraging business enterprise, this minor depression did not last long, and by June, 1916, the increase in deposits (which is nearly always associated with an increase in advances) was almost entirely confined to current accounts. This was true also of the following year, and as the public's demand for cash expanded, the whole of the increase in the note issue in that year (£4 million) passed into the people's pockets. As the banks' cash reserve fell owing to heavy exports of gold, the reserve ratio declined to 27% of deposits in 1917. This ratio was maintained in 1918, as, of the further increase in the note issue, about £3 million came into the banks' cash reserves, and only £2 million were absorbed by the holdings of the public. By June, 1919, another £2·6 million had passed into the public's pockets, and only £0·5 million into the banks' cash reserves. Thus in five years the public's cash holdings had almost doubled, and the banks' cash reserves had increased by 40%. Almost all the gold produced in Australia over this period had been, on balance, exported, so this increase in the quantity of cash may be attributed practically entirely to the

expansion of the note issue. With the increase in cash went an increase in bank credit; the banks' deposits subject to cheque had increased by approximately 70%. Up to September, 1919, wholesale prices (Melbourne index) had risen by 68% and retail prices (capital cities index) by 47·5%, despite attempts, on the part of the Government, to fix prices and to prevent "profiteering".

There can be no doubt that this inflation facilitated the financing of the war. Firstly it reduced somewhat the competition between States and Commonwealth for loans in Australia in the earlier part of the war; secondly, it strengthened the cash resources of the banks and enabled them to lend more freely to customers who wished to invest in war loans; thirdly, the consequent rise in prices, in conjunction with the inevitable lag of wages, brought high profits for some sections of the community, encouraging them to buy bonds and raising the yield of progressive income taxes. Taxation covered only £46 million out of £311 million war expenditure up to June, 1919; without inflation it would have been difficult to borrow the £194 million which was raised within Australia for war purposes, in addition to £52 million for ordinary loan expenditure.

Although hostilities ceased in November, 1918, the costs of the war continued at a fairly high level for a couple of years, and indeed war costs in the form of pensions and interest on war loans still appear in the Commonwealth budget. Borrowing for war purposes continued until 1922, but no appreciable expansion of the note issue took place after 1918. Nevertheless prices continued to rise until August, 1920. This was partly due to the fact that prices had been rising during the period of currency inflation,

and, as in other countries, expectation of a further rise tended to increase the "velocity of circulation". Another influence was the importation of capital and continued expenditure on public works—investment in excess of Australian savings.[3] And equally important was the post-war boom in other countries, to which reference was made in Chapter VIII, and which brought good prices for Australia's exports. In Australia, too, there was a boom, bringing unemployment down to little over 5% early in 1920. The business activity of the period is reflected in the growth of current accounts of the banks from £119 million in June, 1919, to £134 million in 1920, while fixed deposits rose by a mere £1·5 million. The banks' reserve ratio fell from 25% to 23% of deposits, and interest rates began to rise about the middle of 1920. But prices had already turned downward in Britain and U.S.A., and the slump which followed was shared by most countries. In Australia, unemployment jumped to 12·5% towards the middle of 1921, and current accounts fell from £134 million in 1920 to £128 million in 1921, and £124 million in 1922, while fixed deposits rose from £114 million in 1920 to £120 million in 1921 and £137 million in 1922.

In some countries the slump was regarded as a "stabilization crisis" associated with the end of currency inflation. Countries such as Germany and Austria, which continued to inflate were able to postpone the crisis until later. Some significance may be attached, therefore, to the stabilization of the Australian note issue after 1918, following Great Britain's example. In Chapter VII we saw that it is extremely difficult to bring a period of inflation to an end without provoking an unfavourable reaction in

[3] Cf. Chapter IV, § 7.

general business, and while the economic difficulties in Australia in 1921 may be regarded as part of an almost world-wide slump, their intensity was influenced by local monetary policy. Fortunately, repentance after inflation did not lead to an immediate drastic deflation; during 1919 and 1920 the note issue varied within limits about £2 million apart, and towards the end of 1920 an increase of some £5 million from the lower level of November was permitted. But for this, and for increased overseas borrowing in 1922, probably the situation in 1921 would have been more difficult than it was.

A change in the control of the note issue was made in December, 1920. A new Board was set up, consisting of the Governor and Deputy-Governor of the Commonwealth Bank, a representative of the Treasury, and two outside "financial experts", and although the notes were still "Treasury Notes" they were to be issued by the new "Note Issue Department" of the Bank. It was provided that apart from a minimum 25% reserve of gold, the notes should be backed by bank deposits, securities of the United Kingdom, of the Commonwealth and States, or trade bills of a currency of not more than 120 days. The last of these made it legally possible for the Notes Board to advance funds directly to business men, as a central bank might, to supplement the credit of the trading banks, but advantage was not taken of this provision.

On the contrary, the new Notes Board apparently thought that inflation had gone too far, and that the note issue should be reduced. By December, 1922, it fell to under £52 million, about £7·5 million less than at the beginning of 1921. The Board accomplished this by withdrawing bank deposits, and by holding less Commonwealth securities. The latter were

reduced by £7·7 million from June, 1920, to June, 1921, and remained constant at £3 million to June, 1923. The Note Issue Department's bank deposits fell from £5·4 million in June, 1920, to £1·7 million in June, 1923. In 1922 the Notes Board agreed to issue notes temporarily up to £3 million if necessary, to handle the exports of the 1922-23 season, but not until shortly before the Commonwealth Bank took over the note issue in 1924 was it increased. This period threw into a clearer light certain features of the Australian monetary system, which, although present since earlier days, had escaped the attention of economists and were not explicitly understood by bankers. But once they were recognized, they involved modifications in monetary theory, and these will be explained in the following section.

§ 3. *Lessons of the sterling exchange.*

Australia's exports are chiefly primary produce, and her imports chiefly manufactured goods. We have already seen that the prices of imports and exports are liable to diverge in periods of monetary instability (Ch. IV, § 8). If, therefore, the quantity of goods imported and exported remains constant, the money values of imports and of exports may on occasions move quite differently. Add to this the fact that the volume of primary production is subject to fluctuations because of good or bad seasons, while imports vary chiefly with local demand for them, and it is evident that a year to year equality in the money values of Australia's exports and imports cannot be expected.

The proceeds from the sale of exports are in foreign currencies, of one kind and another, and the export producer or his agent naturally wants to change them

into Australian currency. On the other hand there are importers who want to buy foreign currencies to settle their obligations. With a free foreign exchange market, as described in Chapter V, a good season, with high prices for our exports, would lead to so strong a demand for Australian currency as to cause its value to rise in terms of other currencies and a bad season or a fall in export prices would tend to have the opposite effect. But traditionally the Australian pound has been considered as identical with the pound sterling. The Australian branches of the Royal Mint coined gold into English sovereigns, and it is only since 1910 and 1916 that their issues of token coins have been specifically Australian, distinguishable at sight from English pennies, shillings, and the like.[4] Nobody thought of the price of sterling in terms of Australian money varying, and indeed so long as gold could be freely exported and imported, the rate could not move beyond the "gold points" (Ch. VI). It is only since the "rate on London" has become high that the method of quoting explained on page 72 has been adopted. Previously it was customary to buy and sell drafts, or telegraphic transfers on London at a quoted "discount" or "premium", as the case might be. The buying rate at the time of writing is quoted as £125A (equivalent to £100 sterling), but the older method of quoting would be to say the buying rate was a *premium* of £25%. In November, 1924, when the banks would pay only £96/10/ Australian for £100 sterling, the buying rate was quoted as 70/- per cent *discount*. This method of quoting indicates that the Australian and English currencies were popularly considered to be really one and the same thing.

Even when both countries had left gold, efforts were

[4] See above, page 232.

made to maintain "parity", and during the war the premium on London was rarely much more than £1 per cent. This would be somewhat surprising to a devotee of the purchasing power parity theory of the exchanges, since prices rose much more violently in Great Britain than in Australia. Then after 1920 prices fell far more rapidly in Great Britain than in Australia, but the discount on sterling at no time exceeded £3/10/- per cent.

Over this period, 1914-24, the relative values of exports and imports varied violently from year to year, and capital imports and gold exports did not compensate for these fluctuations. This means that, despite considerable year to year changes in the demand for, and supply of Australian currency in terms of other currencies, its exchange value was kept pegged as close as possible to sterling, instead of fluctuating with the changes in supply and demand. Now the only way to peg the foreign exchange rate is for some authority, such as the banks, or the Government, to accumulate holdings of foreign currencies when the pegged currency is in strong demand, and to diminish its holdings when the pegged currency is in little demand, and tends to fall in value. This, we saw, is the principle underlying the British Equalization Fund (p. 215), and the same principle underlies Australian banking policy when off the gold standard. The Australian banks' foreign funds are held chiefly in London, and are often referred to as their "London balances". Conditions which would lead to an appreciation of the Australian pound (higher export values, increased borrowing, or a fall in imports) increase the London balances of the banks; conditions which would lead to its depreciation (lower export values, decreased borrowing, or a rise in

imports) deplete the London balances. Then so long as the banks are prepared to allow these London balances to fluctuate, the exchange rate on London can be held at whatever level is desired. In the past the rate normally desired was parity.

There are, of course, limits within which the banks will or can allow their London balances to fluctuate. On the one hand, if they sink too low, it may become impossible to supply sterling and other foreign currencies to all those who wish to purchase it at the ruling rate. This happened in 1930, and the banks resorted to rationing the available foreign exchange among their customers. On the other hand if the London balances are unnecessarily high, the surplus could be more profitably employed in Australia. In London it is lent, it is true, but on short term (to English banks and the money market), and it would earn less than the same sum in Australia. But there is another reason why the growth of London balances beyond a certain point may become embarrassing. This increase means that the banks are selling more Australian currency than they are buying. When they sell Australian pounds, the buyer takes delivery, in the first instance, in the form of a bank deposit in Australia; when they buy Australian pounds, the seller draws a cheque in favour of a bank, and reduces his deposits in Australia. Therefore, the growth of London funds involves, other things being equal, an increase in bank deposits within Australia.[5] With the quantity of cash in Australia fixed, this reduces the reserve ratio. If export of gold from ments in 1893 did not open their doors again; but of

[5] It might lead to the cancellation of advances; this comes to much the same thing, since otherwise deposits would fall when the advances were reduced.

their London funds into gold and ship it to Australia to strengthen their cash reserve. If England is off gold, and sterling is considerably depreciated, this is not possible, but early in 1925, although the export of gold from England was still forbidden, sterling had risen so close to parity with the dollar, that it was worth while for the Australian banks to buy dollars with some of their London funds, to change the dollars for gold, and to ship the gold to Australia. If this were not possible or would prove too costly, the banks could do one of two things: either contract credit to force down deposits and to raise the reserve ratio, or ask the note-issuing authority to issue new notes in exchange for securities or for drafts on London. In New Zealand, as Professor A. H. Tocker has shown, the position was simpler, since at that time the banks had the right of note issue, and could meet any demand for cash by printing more notes. But in Australia the note issue was controlled by the Notes Board.

This was the situation in 1923. London balances (according to Dr Wilson's estimates) had risen. After June, 1924, the rise was renewed and the banks complained that there was a shortage of currency and that they were compelled to refuse credit to customers. But the Notes Board expressed itself as opposed to any further inflation, and was said to have refused even to issue notes against gold. Since gold had passed out of circulation the banks could hardly pay gold out across the counter. Finally, in 1924, after much discussion it was agreed that the note issue should be increased, the banks handing over Commonwealth securities in exchange for the notes. Then the possibility of importing gold, noted above, checked the growth of the London balances, and on April 30, 1925,

England and Australia returned to the gold standard together.

It was the peculiar difficulties of 1923-24 which drew Australian economists' attention to the relationship between movements in London funds and movements in deposits, but it was soon recognized that this relationship was significant at any time. Apart from gold movements, the London balances could be controlled to some extent by the small exchange movements which were permitted, and by the expansion or contraction of advances. A rise in the price of sterling and a contraction of credit in Australia would tend to discourage imports, and thereby to strengthen London balances; conversely a fall in the price of sterling and an expansion of credit would encourage imports, and help to deplete London balances. There are grounds for believing that conventional banking practice in Australia, although not directed with a view to establishing a close agreement between London balances and lending policy, has, nevertheless, this effect. In our earlier discussion of the theory of bank credit, we represented the banker as controlling his advances according to variations in the *reserve ratio* of cash to deposits. But according to their own testimony, Australian bankers attach importance also to the *proportion of advances to deposits,* as a secondary guide, and consider themselves to be lending more freely if this proportion rises. An increase in London funds means an increase in deposits relatively to advances, so that the ratio of advances to deposits falls. If the cash reserve ratio is not too low, the banks then lend more liberally, to restore the former ratio of advances to deposits. As we saw in Chapter II an expansion of advances usually leads to an expansion of deposits, but so long as the ratio of advances

is less than 100%, it will be raised by the equal expansion of both advances and deposits. The credit expansion, then, by stimulating imports tends to diminish London balances, and this involves a decline in deposits relatively to advances, and raises still further the ratio of advances. Thus, in normal conditions, by endeavouring to prevent large fluctuations in the ratio of advances to deposits, the banks tend to check the growth of London balances. If the same analysis be applied to a fall in London balances, it will be seen that the attempt to maintain a fairly constant ratio of advances to deposits will check the decline and may even restore the London balances to approximately their former level. Thus, this traditional policy tends to reduce fluctuations in London balances to a minimum, even without recourse to variations in the exchange rate. But if the banks are to be guided by this ratio, they must allow the reserve ratio to fall when London balances rise, and to rise when London balances fall, and this they usually do in practice. To this extent, therefore, the theory based upon the English practice of greater stability in the reserve ratio does not describe adequately the factors controlling credit policy in Australia.

It must not be forgotten, however, that there are conditions in which it would be extremely difficult to maintain a constant ratio of advances to deposits, and such conditions were present in Australia in 1930. The individual banks had always allowed some variation in the ratio, despite their general policy of seeking to keep it constant, and during the depression they allowed the ratio to rise far higher than usual.

It should be emphasized that the ratio to which the above remarks refer, is the ratio of advances to deposits. The official statistics of banking include

figures of advances plus securities, although, as we saw in Chapter II, these two types of assets are by no means the same in the bankers' eyes. If, as is sometimes done, we take the ratio of "advances plus securities" to deposits, it will be seen that during the depression a peculiar situation arose. The fall in export values and in overseas borrowing reduced London balances and deposits by a sum sufficient to bring deposits below "advances plus securities". This brought the ratio of "advances plus securities" to deposits up above 100%. As the banks allowed or induced their advances to drop, every decline in advances involved an equal decline in deposits. And since "advances plus securities" *were now in excess* of deposits, every equal reduction in both tended to raise the ratio of "advances plus securities" still higher.[6] It is only natural that the banks should point to the rise in the ratio of "advances plus securities" to over 100%, as evidence that "solely as a result of the reserves prudently accumulated during more prosperous times, the banks have been able to advance to their customers an amount greater than that deposited with them".[7] But once deposits dropped below "advances plus securities", nothing the banks could do within Australia could save them from keeping "advances plus securities" above deposits, except action to discourage imports and to encourage exports until the recovery of London balances brought deposits up again relatively to advances. Nevertheless, the authority in control of the note issue could have adjusted the ratio of "advances plus securities" to

[6] A hypothetical example may make this clearer. With advances £110 and deposits £100, the ratio is 110%. Reduce both by £50, and advances are £60, with deposits £50. The ratio is now 120%.

[7] Circular of the Bank of New South Wales, November, 1932, p. 12.

deposits by lending notes on deposit to the banks, and did make a step in this direction by discounting Treasury bills. This will be explained in Chapter X.

At this stage we merely notice that the ratio of "advances plus securities" to deposits does not merit the significance often attached to it in popular discussion, and remind the reader that it is not the same thing as the ratio of advances (alone) to deposits, which the banks use as a secondary guide in their credit policy.

§ 4. *Development of central banking.*

We referred in an earlier chapter to the Genoa Conference of 1922 (page 194). Among the resolutions on currency which were agreed to was the following: "Banks, and especially banks of issue, should be free from political pressure, and should be conducted solely on lines of prudent finance. In countries where there is no central bank of issue one should be established." At that time Australia had a Government bank, formed to compete with the trading banks, and this bank had a separate "Note Issue Department", which, under the control of the Notes Board, determined the Treasury note issue. The Government decided to transform this bank into a central bank of issue by giving it complete control of the note issue, and to make it quite free from political pressure. It was hoped that the Commonwealth Bank in its new form would be able to control banking policy in the interests of the whole community.

The Act of 1924 did not restrict the Bank's lending activities in any way, but placed the management of the Bank in the hands of a Board of Directors, eight in number, including the Governor, the Secretary to the Commonwealth Treasury, and six others who must

be or have been actively engaged in agriculture, commerce, finance, or industry. In this way the board might combine practical experience with representation of different interests. It probably did not enter the minds of the framers of the Act that an academic teacher of economics or an experienced banker might be a useful member of the Board. But the possibility of bankers seeking election was foreseen, and provided for, so that a bank director must resign his directorship before joining the Commonwealth Bank Board. The Governor carries out the administration of the Bank, but its policy is determined by the Board as a whole, and the Board elects its own chairman. The old Notes Board disappeared, although its last chairman became the first Chairman of Directors of the Commonwealth Bank, which now took over the note issue.

This made the Commonwealth Bank a bank of issue, and the appointment of directors for seven years, and the provision that they should retire in rotation were considered to set it free from political control. But further conditions were necessary if the Bank was to control banking policy in general. Its capital was increased, it was given power to discount and to re-discount bills of exchange, and the trading banks were to settle clearing-house obligations by cheques drawn on the Commonwealth Bank. The second of these provisions would enable the Bank to advance cash to the trading banks, at an appropriate rate of interest, as the Bank of England has done in times of emergency. The third provision made it necessary for the banks to keep part of their cash reserves in the form of deposits with the Commonwealth Bank.

This was apparently intended to strengthen the cash resources of the Bank, and to centralize the cash

reserves of the trading banks, so that better help could be given to any particular bank in temporary difficulties. The U.S. Federal Reserve System was built up on this principle, so that, branch banking being forbidden, a particular bank in difficulties owing to local conditions could draw upon the central reserve. With widely-spread branch banking, Australia stood less in need of such provision than the United States. Its chief effect, in practice, was to render the next few years' movements of the note issue very misleading to all but the initiated. From 1924 to 1929 the note issue fell by about 25%, and some observers concluded that this "deflation" had produced the depression which began in the latter year. But this was not deflation; it was the result of a mechanical process associated partly with the settlement of clearings through the Commonwealth Bank and partly with the Bank's decision to hold Commonwealth Bank deposits as a reserve in place of notes. The trading banks deposited notes for these purposes, and this involved merely a transfer of notes from them to the Commonwealth Bank, and no decline in the note issue. But the Commonwealth Bank decided to keep in the Trading Department only sufficient notes for till money, and to retire the surplus. The Note Issue Department gradually transferred securities to the Trading Department in exchange for these notes, which then went automatically out of circulation. If a trading bank wished to draw upon its deposit from the Commonwealth Bank, the latter would transfer securities from the Trading Department to the Note Issue Department in exchange for new notes, and pay the latter over to the trading bank. This, in fact, has been done in each year since 1927 at Christmas time, when the public, including shopkeepers, need a lot of change for

the increased volume of cash purchasing which is customary at that season. Examination of Chart II will show clearly this seasonal movement of the public's note holdings which, prior to 1927, involved an opposite movement in the banks' holdings, but now leads to a temporary increase in the note issue and a decline in the banks' "cash with the Commonwealth Bank". The same chart also reflects the diminished Christmas shopping of the depression period.

To the extent that the fall in the note issue was replaced by the trading banks' "cash with the Commonwealth Bank", it represented merely a change in the composition of the total quantity of money, which now consisted of cash, ordinary bank deposits, and this other form of credit, new for Australia, namely, trading banks' deposits with the Commonwealth Bank. In official bank returns the latter is included under "cash", and is just as good, from the trading banks' point of view, as Commonwealth Bank notes.

This change in the *composition* of the money in circulation in Australia has, however, opened the way for the Commonwealth Bank to vary the *quantity* of money (we may ignore token coins) without any change in the note issue. And while, other things being equal, such variations might be traced by examination of other items in the banking statistics, relatively few people would understand the significance of these movements. For instance, a Committee of Treasury experts issued a memorandum in 1931, to explain that "the decrease in the note issue since 1924 has not involved a material contraction of the currency". The change noted above was carefully explained, and it was implied that the whole of the decline in note issue was due to this mechanical readjustment. But to test this it is necessary to see

whether the banks' note holdings plus cash with the Commonwealth Bank, plus the public's note holdings had fallen or not. This is done in the following table:

TABLE 8.

Note Issue and Cash with the Commonwealth Bank.

£1,000,000.

Year (June Quarter).	Public's Holdings of Notes.	Trading Banks' Holdings of Notes and Cash with the Commonwealth Bank.	Total (1)+(2).	Commonwealth Bank's Note Holdings.	Note Issue.
	(1)	(2)	(3)	(4)	(5)
1924	23·5	22·9	46·4	9·1	56·9
1925 ..	23·3	23·2	46·5	14·0	57·6
1926 ..	24·3	22·6	46·9	12·2	53·9
1927 ..	25·9	22·6	48·5	7·1	48·4
1928 ..	25·0	27·3	52·3	4·5	44·6
1929 ..	24·8	23·1	47·9	4·2	42·6
1930 ..	22·8	33·5	56·3	5·7	44·7
1931 ..	24·8	51·3	76·1	4·1	49·9
1932 ..	25·5	47·8	73·3	6·0	51·8
1933 ..	24·5	39·4	63·9	5·6	47·9
1934 ..	25·1	51·4	76·5	6·4	46·4

The trading banks' cash and the public's note holdings (Column 3) actually rose from 1924 to 1928, and the fluctuations in the Commonwealth Bank's note holdings have little significance in this connection. But in 1929 the trading banks' notes and cash with the Commonwealth Bank declined by over £4 million, and this did involve a "contraction of the currency". And in 1930 and 1931, the same item expanded far more rapidly than the note issue. It is well known that this expansion was due to the increase in short term loans

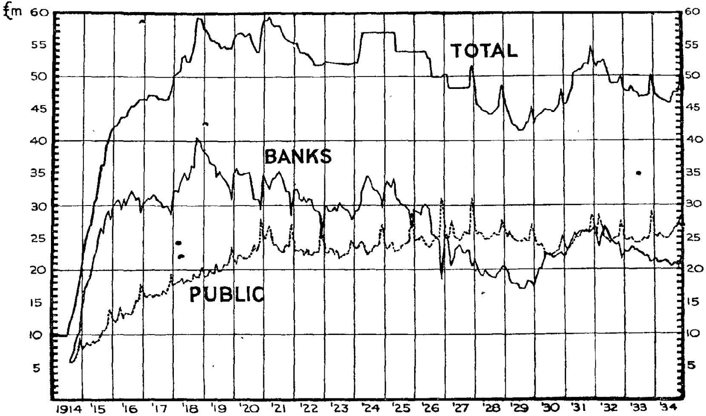

CHART 2.—AUSTRALIAN NOTE ISSUE
Source: Return supplied by Commonwealth Bureau of Census and Statistics.

by the Commonwealth Bank to the Governments, the occasion for which will be considered in the next chapter.

There are, however, other possible methods of expanding the quantity of money. One is the purchase by the Bank of securities; these would be paid for by cheques on the Commonwealth Bank which, when paid into trading banks by the sellers of the securities and finally "cleared", would increase the trading banks' deposits with the Commonwealth Bank. The same effect could be obtained by the Bank buying exchange on London or other foreign centres from the trading banks; the latter's London balances would decline, and their "cash with the Commonwealth Bank" would increase. Again, the Commonwealth Bank might lend direct to a trading bank, thus increasing its cash reserve. Lastly, the Bank could increase its loans to business men and farmers. This would initially be simply an expansion of credit, but in so far as it led to cheques drawn on the Commonwealth Bank being paid into trading banks, it would increase the latter's cash with the Commonwealth Bank. The chief objections to the last method are that it might be a source of weakness in time of crisis, and that it appears to involve competition with the trading banks for ordinary banking business, which, it is generally agreed, would hinder them from having confidence in the Commonwealth Bank as a central bank. The separation in 1928 of the Savings Bank Department, which is a competitor of the trading banks so far as the public's deposits are concerned, may be interpreted as a formal recognition that the central bank should not compete with the trading banks whose policy it is proposed to lead, and on occasion to control. And it is claimed that the Rural Credits

Department, established in 1925, manages to avoid such competition, too. But the Commonwealth Bank still engages in ordinary business, even if it does not compete aggressively with the trading banks.

Complementary to the above methods of expanding the quantity of money are the corresponding methods of contracting it; a reduction in short term advances to Governments, the sale of securities, the sale of foreign exchange to the trading banks, the withdrawal of direct loans to the trading banks, and the contraction of advances to business men and farmers. In particular it should be noted that sales of securities by the Bank tend to depress their price, and to increase their yield to buyers. This represents a rise in the rate of interest, as well as a contraction of the quantity of money. Similarly, if the Bank buys securities this tends to reduce the rate of interest as well as to increase the quantity of money.

None of these methods requires an expansion or contraction of the note issue unless it leads in turn to an expansion or contraction of the public's holdings of cash. The former would normally imply a boom as in the period up to 1928, and the latter a depression, as in 1930; but fears as to the position of certain banks might lead to the hoarding of notes, such as is reflected by increase in the public's note holding in 1931. Within the limits imposed by these conditions, the Commonwealth Bank can increase or decrease the quantity of money without necessarily varying the note issue, and this fact, by making its control less obvious, has strengthened its position as a central bank. The occasion for the exercise of its powers came, of course, in 1929, with the beginnings of the great depression, and in the next chapter we shall consider the use actually made of these powers.

In Chapter VI we suggested that the maintenance of a gold standard requires appropriate action by the central bank to prevent large imports and exports of gold, checking the former by initiating a credit expansion and the latter by initiating a credit contraction. But although Australia returned to gold in 1925, the Commonwealth Bank was not in a position to control credit in this way, and even as its position improved it did not appear to attempt to assume the defence of the gold standard before 1929. How, then, was the gold standard maintained, in the face of year to year variations in Australia's international payments?

The answer lies in the mechanism of the sterling exchange, discussed in § 3. In ordinary circumstances, the rate of exchange on London did not approach the gold points (export or import) so long as the trading banks' London balances were not uncomfortably small or large. We have seen that the banks' traditional practice of maintaining a fairly constant ratio of advances to deposits tended to check fluctuations in their London balances, and so long as this practice was successful, the ordinary mechanism of the gold standard did not come into operation. In England an export of gold gave the signal to the Bank of England for a credit contraction; in Australia, before gold exports could exceed the annual production the banks' London balances would have had to fall so low that they would raise the "premium" on London, but this fall in London balances would be accomplished by a decline in the excess of deposits over advances, which would itself be the signal for a credit contraction. In other words, the traditional practice of the Australian trading banks tended, no doubt unconsciously, to ensure the observance of the "rules of the gold standard", and the Commonwealth Bank only came into the picture

as one of the trading banks. For the maintenance of the gold standard, at least in normal periods, control of credit by the Commonwealth Bank, even if it had been possible, would have been superfluous.

In this respect as in many others, the depression of 1929 was a turning point, as it led the Commonwealth Bank definitely to undertake the control of the exchange rate, which may well involve an attempt to control the credit policy of the trading banks.

§ 5. *Bank amalgamations.*

One further tendency of recent years remains to be noticed in our survey of the Australian monetary system, namely, the concentration of banking. This is to be observed both in ordinary banking and in the case of savings banks. The following amalgamations of trading banks have been carried through since the beginning of the war:—

Year.	Banks Absorbed.	Banks Taking Over.
1917 ..	Bank of North Queensland Royal Bank of Queensland	Bank of Queensland (formed for the purpose).
	National Bank of Tasmania	Commercial Bank of Australia.
1918 ..	City Bank of Sydney ..	Australian Bank of Commerce.
	Colonial Bank of Australia	National Bank of Australasia.
1921 ..	London Bank of Australia Commercial Bank of Tasmania.	English, Scottish and Australian Bank.
1922 ..	Bank of Queensland ..	National Bank of Australasia.
1927 ..	Bank of Victoria	Commercial Banking Company of Sydney.
	Royal Bank of Australia	English, Scottish and Australian Bank.
	Western Australian Bank	Bank of New South Wales.
1931 ..	Australian Bank of Commerce	Bank of New South Wales.

The only new trading banks since 1914, apart from

the Bank of Queensland noted above, were on a relatively small scale, and the most important of these, the Primary Producers' Bank of Australia, founded at Sydney in 1923, was closed in 1931. The absorption of the N.S.W. Government Savings Bank by the Commonwealth Bank in the same year involved the separation of its Rural Bank Department into a separate small trading bank. Ignoring it, and one or two small institutions and branches of foreign banks, but including the Bank of New Zealand, the number of banks operating in Australia in 1934 was ten; and the changes noted above had extended the scope of several of the larger banks.

We have already noticed that in some States, Government Savings Banks were in competition with Trustee Savings Banks, and that amalgamation was accomplished in Victoria and proposed in New South Wales before Federation. When the Commonwealth Bank opened a Savings Bank, the State Governments were invited to merge their Savings Banks and in any case the Commonwealth Bank proposed to use Post-Offices as agencies, thereby forcing the State Government Savings Banks to seek other premises. The Tasmanian Government arranged for the transfer of its Savings Bank, although the Trustee Savings Banks continue to function independently. In New South Wales the two Savings Banks were amalgamated in 1914, and the new Government Savings Bank was highly successful until 1931, when a serious run caused it to close its doors, and to seek absorption by the Commonwealth Savings Bank. The Queensland Government Savings Bank was taken over in 1920, and the Western Australian Government Savings Bank in 1931. This leaves in the field the Commonwealth Savings Bank, the Government Savings Bank of

Victoria and the Trustee Savings Banks in South Australia and Tasmania. It would be surprising if the Commonwealth Savings Bank did not sooner or later absorb these remaining survivors. This would further strengthen the power of the Commonwealth Bank to control the policy of the trading banks, since the latter regard the Savings Banks as competitors for fixed deposits, and must take into account in arranging their own deposit rates, the rates offered by the Savings Banks. If the Commonwealth Bank wants the trading banks to reduce the rate of interest at which they are prepared to lend, a reduction in the rates at which Savings Banks will borrow will help the downward adjustment. Conversely if the Savings Banks raise their deposit rates, this is likely to result finally in the trading banks asking higher rates on their advances. This point should be borne in mind as we approach the problem of monetary policy in the depression.

§ 6. *Chief features of the Australian system.*

We may conclude this chapter by summarizing the main points of the monetary system as it had developed up to 1929. Australia was on the gold standard, but there were no gold coins in ordinary circulation. No doubt some individuals had a sovereign or two, saved since the days before the war, and the trading banks held part of their cash reserve in gold. Apart from this the gold was practically all in the vaults of the Commonwealth Bank. The chief form of cash in circulation was notes issued by the Commonwealth Bank, and token coins of which the greater part had been minted in Australia, while the others consisted of imported British coins. The paper money and, to all intents and purposes, the token coins were freely con-

vertible into gold and the export and import of gold were free; consequently Australian money was as good as gold, the price of gold was fixed and the Australian pound, shilling, and penny were practically equivalent to their British relatives. In the past Australia had been an important gold-producing country, but by 1929 the annual production had fallen to insignificant figures.

Banking was well developed, being almost entirely in the hands of a few large and experienced trading banks, operated for private profit, and of the Commonwealth and the State Savings Banks. The Commonwealth Bank had made certain progress towards becoming a true central bank, for it already held, as deposits, a great part of the other banks' cash reserves. But it had not yet reached a position of dominance comparable with that of the Bank of England, and was, in many respects, a trading bank.

The maintenance of the gold standard was ensured, in ordinary circumstances, not by action on the part of the Commonwealth Bank according to the "rules of the gold standard", but by the action of the trading banks according to their own rules. Fluctuations in the value of Australian exports involved fluctuations in balances abroad (the so-called "London balances"), and changes in the latter were generally followed by changes in credit policy within Australia, similar to those demanded by the "rules of the gold standard". A rise in London balances, tending to raise the exchange rate on Australia, led to an expansion of credit, just as though a central bank were lowering its bank rate and buying securities; and a fall in London balances, tending to raise the exchange rate on London, led to a contraction of credit, just as though a central bank were raising its bank rate and selling securities. In

this way variations in the exchange rate were reduced to a minimum. In ordinary circumstances such a policy was ensured, as we explained in § 3, by the accepted practice of the trading banks, of trying to keep the ratio of advances to deposits fairly constant, and consequently action by the Commonwealth Bank would have been unnecessary even if it had been in a position to control the policy of the trading banks. But when extraordinary circumstances arose, in 1929, the Commonwealth Bank, as we shall see in the next chapter, was driven to assume a position of far greater importance in the banking system.

CHAPTER X

AUSTRALIAN MONETARY POLICY FROM 1929

§ 1. *Australia in the world depression.*

The preceding chapter brought our account of the Australian monetary system up to 1929, the year which is generally taken to mark the beginning of the world depression. At first it was not recognized as such; particular countries were concerned with their own difficulties of various kinds, and only in 1930 did it become evident that the whole world was suffering increasing unemployment and financial strain. In Australia the general business position had not been favourable in 1928, and although there was a slight improvement early in 1929, this was but a brief respite. Towards the second half of the year unemployment grew and the public finances became more and more disorganized. Wool-growers were faced by a considerable fall in prices, and Governments were driven to cut down their programmes of loan expenditure because no further borrowing overseas was possible after 1928. Throughout 1930 the depression deepened as wheat prices followed wool prices downwards, public revenues declined, and all the symptoms of distress were aggravated. Not until towards the end of 1932 was there any appreciable recovery, and throughout 1934 there was still very heavy unemployment.

No attempt will be made either to trace all the various measures adopted by Australian Governments to check the depression and to alleviate the distress it caused, or to evaluate their efficacy. We shall consider only the effects of the world depression upon the Australian monetary system, the policy followed by those in control of money and credit, and the proposals to attack the depression through monetary policy or to modify the monetary system.

But let us not share the mistake of many critics of public policy in the early days of the depression, who ignored almost entirely the changes which were taking place in the world situation, and their reactions upon Australia. Monetary developments in Australia have been greatly influenced by, and owe much of their significance to the oversea developments surveyed in Chapter VIII. It is probably true that, even if the rest of the world had escaped depression, some reaction would have been experienced in Australia from the relatively prosperous conditions before 1929, but there is no doubt that this would have been small as compared with the depression initiated by the impact of overseas influences. And the same monetary policy would have had different effects if world conditions had been different.

The fall in wheat and wool prices diminished the incomes and expenditure of Australian exporters, and the difficulty of overseas borrowing diminished the expenditure of Governments in Australia; these were "depressive" factors. But their significance for the monetary system lay in the decline in London balances and the fall in the excess of deposits over advances in Australia, which this entailed. We shall consider first the adjustments to which this led.

§ 2. *Falling London balances.*

It is not possible to trace out accurately in figures the effects upon London balances and deposits in Australia of the fall in export prices and overseas borrowing. There are many minor items in the balance of payments which are not recorded by the official statistics, and although estimates for some of these have been made, there is still a considerable margin of error. Moreover, discrepancies arise because the figures of advances and deposits refer not to June 30, the date on which the trade year ends, but to the average of the June quarter. Nevertheless, the available figures show certain large movements in the directions which we would expect from the discussion in Chapter IX, § 3. The fall in prices reduced the value of exports by some £40 million sterling from 1928-29 to 1929-30, leaving an excess of imports to the value to £38 million sterling.[1] This was the first abnormal drain on the London balances. The state of Australia's credit made the floating of long term loans in London impossible, and some long term securities had to be redeemed. But they were replaced with short term loans and an extra £1 million was borrowed in this way, while advances were obtained from London banks amounting to £23 million. With an interest bill (including interest for local government bodies) of £29 million, this left another £5 million to be drawn from the London balances of the banks. Interest and dividends on private account, estimated at £8 million for 1929, should be added to this figure.

The export of £24·7 million of gold in addition to the small annual production (£1·9 million) is further evidence of the drain on London balances, and apart from this they would have fallen very low indeed. As

[1] Figures in this section are in sterling unless expressly qualified.

it was, the trading banks' London balances fell from £45·6 million at June, 1929, to £27·5 million at June, 1930.

This strain on London balances was felt by the banks during the course of the year, and some action was soon taken to discourage the demand for sterling. The exchange rate on London rose to £101 Australian for £100 sterling (average of T./T. buying and selling rates) in July, 1929, and thereafter, by easy stages, to £106/6/3 in March, 1930. Even at these prices, sterling was in such strong demand that the banks could not meet all their customers' requirements, and adopted the practice of "rationing" the available exchange. This involved arbitrary choice among importers and others willing to pay the quoted price, as to who should be allowed to buy sterling. But the unsatisfied customers naturally looked about them for somebody else with sterling for sale, and many were prepared to pay more than the rate quoted by the banks. Consequently some exporters, with sterling funds at their disposal, preferred to exchange sterling for Australian money at the higher rate to be had "outside" the banks. The volume of transactions in the outside market grew steadily, and this competition for sterling played a large part in persuading the banks later to raise the quoted exchange rate still higher.

But does not the operation of the gold standard prevent variations in the exchange rate beyond narrow limits? Once the rate on London rose to £101/15/-, it was cheaper for individuals to convert notes into gold, and to send the metal to London, than to buy sterling from the banks or in the higher outside market. The Commonwealth Bank recognized that the strain on the London balances would involve a continued export of gold, and, with the support of the trading bank

advised the Commonwealth Government, in October, 1929, to pass legislation which "in itself would not prevent exportation of gold from Australia" but "would place the gold in Australia definitely in the control of the Bank". This legislation was passed in November, and the trading banks handed over their remaining holdings of gold coin and bullion in exchange for deposits with the Commonwealth Bank, which could now export the gold in such quantities as it saw fit. Gold exports by the Commonwealth Bank could replenish its own London balances, and help to meet the demand for sterling, and this would, to some extent, counteract the tendency of the exchange rate on London to rise. But the conditions necessary for the operation of the gold standard (set out in Chapter VI) no longer obtained in Australia.

In any case, Australia must sooner or later have left the gold standard, for at the beginning of the crisis her total holdings of gold were only about £47 million, and at the end of 1929-30 they had already fallen to about £17 million, despite the control introduced in November, 1929. It is at least probable that, under a freely-working gold standard, the whole of Australia's gold holdings and the annual production would have been exported during 1929 and 1930, and then the abandonment of the gold standard would have been inevitable. In 1929, no public declaration was made to the effect that Australia was deliberately suspending the gold standard. On the contrary, Sir Robert Gibson, the chairman of the Bank Board, apparently did not realize that the legislation which the Board proposed involved this, for he wrote: "My Board is of the opinion that the last resource which should be adopted would be any course which meant even temporary departure from the operation of the

gold standard on the part of Australia."[2] And the Board stated in its Report in January, 1930, that "it could not possibly desire to advise any action which would savor of Australia departing from the gold standard".[3] Whatever the Board desired, it had advised that Australia abandon the gold standard, and this was, in the circumstances, good advice.

According to the "rules of the gold standard", a credit contraction should have been initiated and incomes depressed until a readjustment of imports and exports would have relieved the strain on the exchanges. As was later said of Great Britain in 1931, so it could be said of Australia in 1929, that she left the gold standard because she was not prepared to take the measures necessary to remain on gold. But these measures, applied wholeheartedly, would have caused a far worse depression than that actually experienced, and might even have provoked civil disorder or revolution. There are few who would urge that Australia should have followed the path of gold standard orthodoxy at *all* costs. And it is extremely unlikely that the gold standard would have survived the disturbances which such wholesale deflation would have involved.

The departure from gold did not, however, mean that the exchange rate on London was left to the free play of the market. An attempt was made to peg it as close to parity as possible. On the one hand it was feared that any considerable depreciation of the Australian £ would react adversely upon Australia's credit overseas; on the other hand it was evident that a high exchange rate on London would increase the cost,

[2] Letter to the Commonwealth Treasurer, October, 1929, reprinted in Shann and Copland: *The Crisis in Australian Finance*, p. 3.
[3] Ibid., p. 6.

in Australian money, of the Government's annual interest payments on the overseas debts. Since revenue was falling far short of expenditure, the latter consideration carried much weight with the Governments. But a greater rise in the exchange rate on London would have checked imports earlier, and so relieved somewhat the strain on the London balances. Australia's traditional method of checking imports, however, is by raising the tariff, and despite the fact that duties had already been increased late in 1929, further increases, surcharges, and even some prohibitions were introduced early in 1930.

The concentration of gold reserves in the hands of the Commonwealth Bank was important in that it represented a further step in the direction of central reserve banking, and limited the freedom of action which the possession of a certain supply of gold conferred upon the trading banks. The Commonwealth Bank Board thought that "the position must be controlled and the available gold used in . . . . the best interests of Australia".[4] And this legislation made such control by the Commonwealth Bank less difficult.

The fall in export values and London balances reacted adversely on deposits and cash reserves in Australia. Before the Commonwealth Bank took over the trading banks' gold, a good sum had been exported, so that cash reserves of the trading banks, excluding the Commonwealth Bank, had been reduced by about £A10 million from June, 1929, to June, 1930. This decline would probably have been still greater were it not for the fact that the Commonwealth Bank was increasing its holdings of securities which, as we saw

[4] Ibid, p. 6.

in Chapter IX, should tend to strengthen the cash holdings of the other banks.

Deposits of the trading banks had been rising during 1927 and 1928, although each year there was a seasonal decline of several million pounds in current accounts in the second and third quarters. The growth of deposits was accompanied by an even greater increase in advances, so that advances stood at 84% of deposits at June, 1929. As was explained in the last chapter, a rise in this ratio usually leads to a contraction of credit, but advances were allowed to expand until the fourth quarter of 1929. By then deposits had fallen to little above advances, and the banks started definitely to contract credit. Customers were asked to reduce their overdrafts, and when they did so, new advances were not made to keep the total constant. Once the depression became acute, business men did not desire to borrow so much, and the reduction of advances continued. But the reduction of advances involved a corresponding decline in deposits, and the ratio of advances to deposits remained steady, instead of falling, as advances were reduced.[5]

The decline in deposits meant that the fall in cash holdings did not involve as great a fall in the cash reserve ratio; it dropped from 18·9% in June, 1928, to 14·0% in 1930. But in any case this fall, in conjunction with the rise in the ratio of advances to deposits, was severe enough to provoke a sharp credit contraction. In eighteen months from December, 1929, advances fell by £A30 million, and deposits by £A16 million, the fall of the latter being checked only by the expansion of the Commonwealth Bank's holdings of securities, already mentioned. Thus the fall in

[5] Cf. page 248.

exports and in London balances had introduced definitely depressive influences into the internal economic situation, as well as placing a strain upon the exchange rate.

In 1930-31 the overseas situation continued to be unfavourable, and further heavy withdrawals were made from the London balances. The quantity of imports fell, partly as a result of the various measures mentioned, partly because of further action during the year, and partly because demand for all goods, imported or Australian-made, declined during the depression. But the value of exports, too, continued to decline. Including the year's gold production, exports exceeded imports by some £15 million only, and with practically no addition to the overseas debt, this surplus was barely half the sum needed for Government interest payments abroad. Exports of gold reserves were necessary, and £9·5 million sterling were shipped to London, and the London balances, even with this assistance, fell slightly. Naturally the decline would have been far greater if imports had not fallen, and indeed, towards the end of 1930 there was some doubt whether there would be sufficient exchange available to meet the Government's interest payments. In September, 1930, a voluntary exchange mobilization scheme was introduced, so that the Governments should have first call on such London funds as the banks might acquire, and an appeal was made to traders to carry out their exchange transactions through the banks. But the outside market in exchange continued, and in October the banks raised their quoted exchange rate to £108/15/-. The rate was pegged at this level until January, when the outside market rate was about £115. The banks finally gave way and raised their rate to £115/7/6 on January 6. But

the outside market rate rose immediately to £117. The banks accordingly chased the outside market rate and caught it at the end of January, at £130/5/-. This has often been referred to as the "freeing" of the exchange rate, but its period of freedom was brief. The new rate was maintained, without any variation, until December, 1931, when it was reduced to £125/5/-, and up to the date of writing, no further change had been permitted.

There is no doubt that the rise in the exchange rate on London helped to check imports. It also rendered exchange rationing unnecessary, and the exchange mobilization superfluous, for at the market rate the demand for sterling was limited to the supply available. The banks have, however, continued the arrangement. Exporters soon found that the high rate was to their advantage, since sales at a given price in sterling brought a larger sum in the now depreciated Australian currency, and local manufacturers welcomed the additional protection it conferred. Before long, the external depreciation of the Australian £ came to be regarded as a "good thing", and a section of the community demanded more of it.

In September, 1931, Great Britain, too, left the gold standard and allowed sterling to depreciate in terms of gold currencies. Now if £130/5/- was the market rate of exchange on London, and if the value in gold currencies of Australia's annual exports did not decline further, Great Britain's departure from gold should have lowered the exchange rate on London. A fixed rate on sterling now meant further depreciation of the Australian £ in terms of gold currencies, and only a change in the market conditions would bring this about in a free market.

It so happened that the fall in the prices of Aus-

tralia's exports seemed to have been checked early in 1931. The fall in terms of gold currencies was renewed, however, after the middle of the year and the future seemed uncertain. On the other hand the suspension of sinking fund payments on the war debt to the British Government, and the Hoover Moratorium of war debts and reparations generally reduced on balance Australia's sterling commitments for interest by some £5 million. Another factor, difficult to assess, was the extent to which the market rate of exchange on London had been driven up by a "flight from the Australian £" which might be followed by a slackening of demand for sterling as confidence was restored. There is no doubt that the adoption of the Premiers' Plan operated in the latter direction. Whatever the causes may have been, the banks' London balances began to recover towards the end of 1931, and the likelihood of a fall in the exchange rate on London was freely discussed. For the banks this would have meant losses on sterling purchased from exporters at the higher rate. On December 3, 1931, the Commonwealth Bank agreed to assume full control of the exchange, fixing the rate at £125/5/-, and agreeing to purchase any surplus London funds of the other banks at this rate. There is little doubt that this involved pegging the rate at a figure above that which would have been established in a free market, just as earlier in the depression it had been pegged lower. But in view of the uncertain situation at the time, this was probably the wisest course. Although London balances accumulated in the early part of 1932, little progress had been made towards restoring the former level before their increase was checked, as imports began to recover in response to slightly improved conditions in Australia. It may well have been that if sterling

had remained on gold, the rate on London would have had to be raised.[6]

The exchange agreement marked another stage in the evolution of the Commonwealth Bank. It enhanced the Bank's prestige and gave it yet another point of control over the banking system as a whole. When it buys sterling from the trading banks their deposits with the Commonwealth Bank rise, and this is equivalent to an increase in the note issue. The Commonwealth Bank can, if it wishes, prevent the growth of London balances from initiating a credit expansion in Australia by selling securities simultaneously with its purchases of sterling from the banks, thereby keeping the quantity of money approximately constant. Such action would involve the Bank's willingness to pile up large London balances when exports were booming, but it might be prepared to do this since its chief concern is to control the monetary system in the general interest, rather than to make profits. Moreover, the Bank accepts the view that Australia needs to re-establish the reserves against such an emergency as drought or a further fall in prices, and since her gold stock has fallen so low, larger London balances should be built up than existed before the depression.

One further effect of the depreciation of the Australian exchange may be noticed. The value of gold in Australian money rose, and when Great Britain left gold, the Australian price of gold rose still higher. This stimulated gold production, which increased from £1·8 million sterling in 1928-29 to £5·4 million in 1933-34 (Australian currency), providing a useful addition to our commodity exports.

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[6] The possible policies regarding the exchange rate in the future will be considered below in § 5.

Some further changes in the monetary system which attracted a good deal of attention at the time were, however, far less important than many people think. By the Act of 1924 the Commonwealth Bank was required to hold, in its Note Issue Department, a gold reserve equal to at least 25% of the note issue. In June, 1931, the Act was amended, reducing the minimum reserve to 15%, but providing that it should be gradually raised to 25% again in four years. This provision was unwise (see page 198). In May, 1932, it was again amended, to allow the reserve to be held in gold or in sterling. This merely gave legal recognition to the fact that the Australian *standard* has been sterling, rather than gold. But although the convertibility of the notes into gold was deleted, no provision was made for their convertibility into sterling or anything else. In practice, of course, they are, in effect, convertible into sterling—at a price—and into other currencies on the foreign exchange market.

The fall in the value of exports and in overseas borrowing therefore affected the Australian monetary system in four chief ways: (i) It greatly strengthened the position of the Commonwealth Bank, and forced upon it the duties and responsibilities of a central bank; (ii) it led to the export of the greater part of the country's gold stock; (iii) it led to the depreciation of the Australian currency on the foreign exchanges; and (iv) it initiated a credit contraction in Australia.

The last of these could have been greatly alleviated if the Commonwealth Bank had deliberately bought securities or taken other steps to replace the net withdrawals from the trading banks' London balances by deposits with the Commonwealth Bank, but there is

little evidence that this was seriously considered by the Bank Board. Nevertheless, the pressure of circumstances did lead to an expansion of central bank credit which, although viewed with suspicion at the time, served to check the deflationary process referred to above and saved Australia from a crisis even worse than that which she experienced.

§ 3. *Expansion of central bank credit.*

During the latter part of 1930 and the early part of 1931 several proposals were made for the expansion of central bank credit, based upon the view that the policy of deflation had gone far enough and was unsuitable as a basis for recovery. A plan for the "restoration of economic equilibrium" was published under the names of Professors Copland, Giblin and Wood.[7] The plan involved (*a*) a reduction of Government expenditure and a determined effort to balance budgets; (*b*) a fall in real wages of 10%; (*c*) an exchange rate that approximated to the real parity as determined by the supply of and demand for London funds; (*d*) a stabilization of the local price level. The two latter objectives involved monetary policy. In the first place the exchange rate which then stood at £ sterling 100 = £A108/10/-, was to be allowed to rise until the purchasing power of Australian and British currency became approximately equal. The Australian pound which was over-valued at that rate was to be reduced in value so that the Australian exporters should receive that portion of income derived from exports which, under the existing exchange rate, was transferred from them to the rest of the community. In the next place an attempt was to be made by central bank action to prevent a too rapid fall in internal prices, and if

[7] *Economic Record,* November, 1930, p. 170.

possible to achieve a temporary stabilization of those prices. The method proposed was that in co-operation with the trading banks the Commonwealth Bank should expand the volume of credit, or at least maintain it, by the "open market policy" of purchasing Government securities. If this were done on a sufficient scale, it was expected that the credit structure of the trading banks would be sustained and some reduction in rates of interest be secured, for, as we saw in Chapter IX, when the Commonwealth Bank buys securities it becomes indebted to the trading banks and their "cash at the central bank" increases so that the trading banks are in a position to maintain their advances, and may be able to provide credit for new and profitable enterprises if willing borrowers are available. Again, when the Commonwealth Bank buys Government securities bearing fixed rates of interest, the price of these securities tends to rise and the actual yield on them to fall, with corresponding effects upon short term interest rates.

The authors of the scheme were careful to point out that the monetary policy which they advocated was anti-deflationist, but was part of a general scheme which could not fairly be described as crude inflation.

In the beginning of 1931 Mr Theodore put forward a plan based also upon the view that deflation had gone far enough. The objective of his scheme was to seek recovery by reversing the existing policy of restricting bank credit and pursuing a policy of expansion. The objective was to be considered achieved when the wholesale price level had been raised to a figure approximately equal to the average level of the five years ending with 1929.

The chief monetary methods to be adopted were (*a*) the purchase by the Commonwealth Bank of Govern-

ment securities; (*b*) reduction of interest rates on deposits and on overdrafts; (*c*) the raising of the exchange rate to its "natural level"; (*d*) the issue of £18 million of "fiduciary notes" to be used over a period of years in paying a bounty on wheat and in providing work for the unemployed.

This was the period of "plans" when proposals for escaping from the depression were even more numerous than explanations of why the depression had come about. Many of those who realized that there had been a contraction of credit were anxious to reverse the process, and some of them were prepared to carry expansion very far. In particular there was a remarkable growth of popular interest in the proposals of Major Douglas which had, when first published some ten years before, almost escaped notice in Australia.

But none of these plans was adopted, and the expansion of central bank credit came about in another way.

The Premiers' Plan which was unanimously adopted in June, 1931, by the Commonwealth Government and by all the State Governments, contained five points, only one of which, No. 4, that bank rates of interest on deposits and advances should by agreement be reduced, directly concerned monetary policy. But in two respects the Premiers' Plan marks an important era in monetary policy. In the first place the Plan was the direct outcome of the attitude of the Commonwealth Bank which announced in April, 1931, that the limit of credit which it was prepared to make available to Australian Governments had almost been reached, and that "it would not continue to finance beyond a stated limit for the various Governments in view of the drift that was taking place without any prospect of correction".[8] In the next place the Plan

[8] *Commonwealth Bank Report*, June, 1931.

contemplated that those governmental deficits, which still would occur even when the reductions of expenditure and increases of taxation prescribed by the Plan had been carried out, should be financed by Government borrowing. It was the form which this continued Government borrowing took which introduced an expansionist element into Australian monetary policy.

As early as 1927 Australian Governments had borrowed money by the device known as the issue of Treasury bills. An example of the wording of a Treasury bill is given below. It will be seen that

WORDING OF AN AUSTRALIAN TREASURY BILL

PAYABLE .... 19 ....   PAYABLE .... 19 ....

£   No.

COMMONWEALTH OF AUSTRALIA
TREASURY BILL

Issued under the Commonwealth Inscribed Stock Act, 1911-1933.

TRANSFERABLE BY DELIVERY.

THIS TREASURY BILL entitles the Bearer to the payment at the office of the Commonwealth Bank of Australia at Sydney, Melbourne, Brisbane, Adelaide, Perth or Hobart of POUNDS, on the day of , One thousand nine hundred and , and such sum is secured on the Consolidated Revenue of the Commonwealth of Australia.

Dated this day of 19 ....

Secretary to the Treasury.

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it is a certificate entitling the bearer to a given sum on a given date. On the strength of this certificate money is lent to a Government by the method of discounting, that is, the lender transfers to the borrower the *present worth* of the sum and at the end of the

stated period receives the *named sum*—the difference between the two amounts being interest on the loan. The practice as developed in Australia was somewhat different from that well known in Great Britain. In Britain when it is decided to borrow by Treasury bills tenders are called for and a competitive price secured, i.e. the lender who is prepared to take the lowest rate of interest is the successful tenderer. Any one, therefore, with money to lend to the British Government may compete. In Australian practice the rate of discount is fixed, there is no tendering, and the bills are taken up only by the Commonwealth Bank or by the trading banks. In Britain the Bank of England normally, if required, will rediscount a Treasury bill, that is, the Bank will take over the bill for the holder and pay him its present worth, taking into account the time which has to run before the bill becomes due, and ruling rates of interest. Rediscounting is an important feature of this method of financing because the holder of a bill can easily secure for it cash if he wishes. The Bank of England rediscounts a Treasury bill (or any other "good" bill) at a *quoted* rate, which the bank may vary at any time it pleases. The Australian Treasury bills at first carried the right to be rediscounted by the Commonwealth Bank at a *fixed* rate. Also, in order to make the bills an attractive form of security, for some of the trading banks were at first suspicious of them, the Commonwealth Bank gave an undertaking to the trading banks that if necessary the bills would be met at maturity. This meant that, if the Commonwealth Government which borrowed the money were unable to repay, the Commonwealth Bank would honour the obligation. In 1934, however, this undertaking was withdrawn and at the same time the Commonwealth Bank announced

that it would quote a rate of rediscount which might vary from time to time.

To trace out the procedure in Australian Treasury bill finance let us suppose that the Loan Council, for example, in agreement with the Commonwealth Bank and the trading banks, decides that an issue of £1 million in Treasury bills should be made on behalf of the Commonwealth Government. The bills are prepared in a department of the Commonwealth Bank which for this purpose acts as an agent of the Commonwealth Treasury. Some of the bills are then discounted by the Commonwealth Bank, which places them with its securities and credits the Commonwealth Government with the proceeds. The rest are sold to the trading banks, which place them amongst their securities and pay for them by transferring by cheque to the Commonwealth Bank some of the deposits held there by the trading banks, which the Commonwealth Bank places to the credit of the Commonwealth Government. When the bills mature, usually at the end of three months, it is customary for new bills to take the place of the old ones. If the bills are held by the Commonwealth Bank this means that the Bank debits the Commonwealth Government with the nominal sum of the old bill and credits it with the present worth of the new bill. If the bills are held by a trading bank the Commonwealth Bank credits it with the nominal sum of the old bill and debits it with the present worth of the new bill. Practice differs, and some trading banks instead of holding Treasury bills amongst their own securities allow the Commonwealth Bank to hold them and take in place an acknowledgement that the bills are held on their behalf. In such a case the life-cycle of a

Treasury bill is completed within the walls of the Commonwealth Bank.

Not until the end of 1930 was any considerable use made of this method of finance. The Commonwealth Bank, then, after consulting the trading banks, agreed to finance Government deficits by Treasury bills authorized by the Loan Council. As will be seen from Table 9 the growth in the volume of outstanding Treasury bills was rapid, and it was this method of advancing credit to Governments which the Commonwealth Bank threatened to limit in April, 1931. After

TABLE 9.
Australian Treasury Bills.

Bills Outstanding. Quarterly Averages.		Rate of Discount.	
	£A.		%
1929—4th Qrtr. ..	2,500,000	Oct., 1929 ..	5½
1930—1st „ ..	1,800,000		
2nd „ ..	2,300,000		
3rd „ ..	2,400,000		
4th „ ..	9,000,000	Oct., 1930 ..	6
1931—1st „ ..	19,870,000		
2nd „ ..	20,620,000		
3rd „ ..	24,520,385	July, 1931	4
4th „ ..	33,669,231		
1932—1st „ ..	41,231,923		
2nd „ ..	42,454,615		
3rd „ ..	48,061,538		
4th „ ..	50,705,000	Nov., 1932 ..	3½
1933—1st „ ..	51,290,000	Jan., 1933	3¼
		Feb., 1933	2¾
2nd „ ..	50,220,000	June, 1933 ..	2½
3rd „ ..	47,381,923		
4th „ ..	49,661,154		
1934—1st „ ..	54,640,962	April, 1934.. ..	2¼
2nd „ ..	55,225,692		
3rd „ ..	52,764,385	Oct., 1934 ..	2
4th „ ..	49,989,786	Jan., 1935	1¾

the Premiers' Plan, however, when it was agreed that Government deficits should be reduced and controlled, Treasury bills were issued to meet deficits and also, to some extent, to finance public works.

When Treasury bills were first issued in considerable volume in December, 1930, the rate of discount was 6%, but in 1932 the Commonwealth Bank instituted a policy of progressive reduction, although the trading banks claim that this checked the reduction of interest rates on advances. The Treasury bill rate now stands at 1¾% (March, 1935).

The rapid growth of this form of finance raised many fears that it would lead to unmanageable inflation. But the policy of the Commonwealth Bank has always been to exert pressure to see that this did not happen. In order to limit the issue the Bank agreed with the Australian Governments that from the beginning of 1933 the proceeds of Treasury bills should be used only for the purpose of financing Government deficits. Moreover, the Commonwealth Bank has successfully urged the adoption of a policy of funding Treasury bills. This means that a loan is raised by the Government on the market and the proceeds are used to meet Treasury bills when they mature. By this process a long term loan, repayable at a fixed date, may take the place of a short term loan, payable in three months. Up to the present date about £17 million of Treasury bills have been funded in this way. More recently the Commonwealth Bank has announced that the custom of financing fresh Government deficits every year must come to an end, and has warned the Governments of the States that, if they continue to have deficits, they must finance them if they can by long term borrowing on the market. For the year 1934-35 the Bank only agreed to finance the deficits if

loans to the same amount were raised during the year to fund Treasury bills.

We have next to trace out the way in which this method of finance promoted expansion of credit. Let us suppose, for the sake of clarity, that Treasury bills to the amount of £1 million have been discounted by the Commonwealth Bank on behalf of the Commonwealth Government. This means that the Government has the right to draw cheques on the Bank to the extent of nearly £1 million. In the course of meeting its ordinary expenditure, or of paying for public works, the Government spends this borrowed money by drawing cheques in favour of its creditors. These cheques are deposited by those people to their credit in the trading bank with which they deal. Since they are drawn on the Commonwealth Bank they increase the deposits held by the trading banks at the Commonwealth Bank. As we have seen in Chapter IX, the trading banks treat their deposits with the Commonwealth Bank as the equivalent of cash, so that the discounting of Treasury bills leads to an increase in the deposits and cash reserves of the trading banks which enables them to expand their advances.

At first Treasury bills were mainly discounted by the Commonwealth Bank, but later the trading banks began to invest in them. At a time when it was difficult to find means of using their additional cash reserves, the trading banks found in Treasury bills an investment which was at once liquid and interest-bearing. Before the rate of discount was reduced considerably the interest rate paid by the trading banks on time deposits was slightly less than that received on Treasury bills. Moreover, the bills were short-dated and renewable, and they carried both the right of rediscount by the Commonwealth Bank and the latter's

guarantee that they would, if necessary, be met at maturity. Consequently a trading bank which invested in Treasury bills could, if it wished, convert them into cash at will. Although the right of rediscount has never been exercised it has been sufficient to make Treasury bills a second line of defence for the trading banks, close behind cash and deposits at the Commonwealth Bank. The result was that the trading banks were able to allow their cash reserve ratio to fall. This they could safely do by replacing some of their cash with Treasury bills. The customary percentage of deposits held in cash before the advent of Treasury bills was about 20, but during 1932 and 1933 was nearer to 15.

TABLE 10.

Trading Banks' Holdings of Treasury Bills.

	December, 1933.	December, 1934.
Treasury bills outstanding	50·8	51·1
Disclosed holdings of trading banks..	27·8	24·0

The trading banks were, at first, not all prepared to disclose their holdings of Treasury bills, but in most cases this reluctance has been gradually overcome, and published figures now enable us to determine approximately how much the trading banks hold, although we cannot trace back to earlier years. The Commonwealth Bank apparently includes some of its Treasury bills under "Short Term Advances" and the remainder under "Securities", but does not publish a separate figure. This secrecy on the part of a central bank is unnecessary. It is, of course, possible to estimate approximately its holdings in the last year or

two from such figures as those given in the table. But it must not be overlooked that Treasury bills are only one of the channels by which the Commonwealth Bank can influence the cash position of the trading banks. The Commonwealth Bank can lend by buying long term securities or making advances direct to customers. The Bank's advances are not very important quantitatively (£6·8 million at December, 1934), and we may ignore them, and allow "short term advances" and securities to represent the total of "central bank loans". It is variations in this total which involve appropriate changes in the total quantity of notes and central bank credit (or banks' deposits with the Commonwealth Bank).

Chart III shows the relationship between central bank loans and the trading banks' cash and deposits. The relationship is a complicated one, since it depends partly upon the movement of London balances of the trading banks, the movement of their advances and securities, the public's holding of notes, and the Commonwealth Bank's holding of notes. All other things being equal,

1. An increase in central bank loans raises trading banks' deposits and cash.
2. An increase in London balances raises trading banks' deposits only.
3. An increase in trading banks' loans (advances and securities) raises trading banks' deposits only.
4. An increase in Commonwealth Bank's note holding lowers trading banks' deposits and cash.
5. An increase in the public's note holdings lowers trading banks' deposits and cash.

Over the period under consideration, all five factors

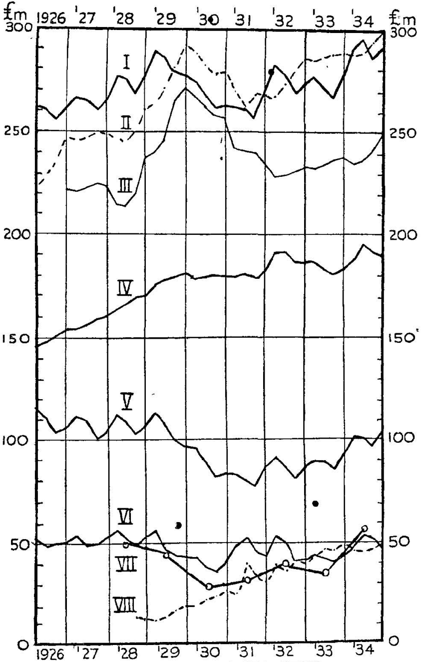

CHART 3.—BANKING STATISTICS

I. Total deposits, trading banks; II, Total advances and securities; ing interest; VI, Cash; VII, London balances of trading banks and trading department of Commonwealth Bank, converted into £A; VIII, Central bank loans.

were subject to variation, and they cannot all be presented conveniently in one chart. But there are some facts observable in our chart which suggest certain conclusions.

In 1929-30 we can see the decline in London balances and in cash reserves (gold shipped to London), associated, as one might expect, with falling deposits. This fall was checked by at least two factors, the slight expansion of central bank loans and the fact that trading bank advances, plus securities, although falling in June, 1930, were still nearly £9 million higher than a year previously. In 1930-31 the fall in London balances was far smaller, and the expansion of central bank loans far greater than in 1929-30; but the decline in advances plus securities was great enough to produce, on balance, a further heavy fall in deposits. The year 1931-32 opened with an unusually high reserve ratio, and the banks began to invest in Treasury bills. Some of these bills came out of the Commonwealth Bank's holdings, and these transactions, by diminishing central bank loans, reduced trading banks' cash (September and December quarters of 1931). But the growth of their securities (including Treasury bills) drove up the total of advances and securities, so that deposits tended to rise. Moreover, London balances increased, which also helped to raise deposits. In 1932-33 advances began to rise, in response to better business prospects, but the increase was very gradual, and deposits remained steady. But in 1933-34, when a rise in wool prices brought a marked increase of London funds, deposits jumped to a record level. At the end of 1934, advances, too, were rising rapidly, but the rise in deposits had been checked by the relapse of wool values and a certain, but not great, decline in London balances.

The graph also shows the marked seasonal variation in deposits not bearing interest, which was very regular before the depression, and is quite visible, even in the disturbed years. It will be noticed that deposits bearing interest remained constant when total deposits were falling, and that even in 1933-34 a good proportion of the increase in deposits was placed at interest.

Another important aspect of monetary policy has been the reduction in rates of interest which has taken place over the last few years. In January, 1930, the trading banks increased the rates offered for fixed deposits and also the rate for advances.

TABLE 11.

Trading Banks' Fixed Deposit Rates.

	Three Months.	Twelve Months.	Twenty-four Months.
	%	%	%
Prior to January, 1930 ..	4	4½	5
January, 1930	4½	5	5¼
End of—			
1931	3	3¾	4
1932	2¼	3	3¼
1933	2	2¾	3
1934	1½	2¼	2½

The Premiers' Plan arranged that by agreement banks were to reduce rates of interest, and by the end of 1931 this had been done. When credit was expanded by Treasury bill finance it was found possible to make further reductions in deposit rates. During 1932 these were initiated by the trading banks, but since 1933 the Commonwealth Bank has taken the lead publicly, and now quotes rates for short term deposits (but not

for long term), which are lower than those of the trading banks.

It is more difficult to estimate the changes which have taken place in advance rates. There is no one overdraft rate, but the rates charged by a bank vary with the standing of the borrower and the security offered. The usual pre-depression practice was to quote maximum and minimum rates with a range of about 1½%. For example, until 1931, rates of 6½% to 8% were quoted. Since banks do not publish the relative amounts lent at the different rates it is impossible to know what is meant for example by "a reduction of 1% in overdraft rates". If the rates change from 6½—8% to 5½—7% it may or may not be that the relative amount lent at 6½ is the same as that lent at 5½.

Recent figures show that there has been some reduction in overdraft rates, but that the rates are still higher than the yield on Government securities.

TABLE 12.
Overdraft Rates and Bond Yield.

Commonwealth Bank Overdraft, Flat Rate.		Bank of New South Wales Overdraft, Maximum Rate.		Redemption Yield per cent. Australian Consolidated 4% Bonds.			
	%		%		£	s.	d.
1 July, 1931 ..	5½						
		1 Oct., 1931 ..	6	Oct., 1931	5	9	3
1 July, 1932 ..	5	1 July, 1932 ..	5½	July, 1932	4	6	7
1 June, 1933 ..	4¾			June, 1933	3	15	1
12 April, 1934 ..	4½			April, 1934	3	8	7
		1 June, 1934 ..	5¼	June, 1934	3	6	6
		1 July, 1934 ..	5	July, 1934	3	4	9
1 Nov., 1934 ..	4¼			Nov., 1934	3	3	3

The table shows bank overdraft rates and the dates from which they took effect, together with the bond

yield for those dates. In August, 1931, the internal loan was converted to lower rates of interest as part of the Premiers' Plan. Our figures relate to the yield on the new bonds after conversion. The yield on bonds prior to the conversion was considerably higher, standing at £7/0/5 per cent in May, 1931.

§ 4. *Monetary policy and recovery.*

Treasury bill finance has been a sealed book to many, but there is no doubt that its effects have been welcomed and that this method of inflation has been popularly received. It has provided funds for Governments at a time when no other means of finance was available. It has, therefore, allowed of Government expenditure which kept up the volume of spending power in the community. Moreover, the trading banks found Treasury bills well suited to their purposes as investments for otherwise idle resources. But there were not wanting critics who pointed out that Treasury bill finance is hardly different in effects from an increase in the note issue. Some argued that an issue of notes would have served the same purpose and not have cost the country so much in interest. Others argued that Treasury bill finance chiefly differs in that it has less disturbing effects upon public confidence and, therefore, is to be preferred to an increase in the note issue even although it is a more expensive method.

Opponents of Treasury bill finance have suggested that the Commonwealth Bank's position as a central bank has been affected by the increase in the volume of Treasury bills. One of the functions of a central bank is to control currency and credit, and it is argued that the outstanding volume of Treasury bills makes the exercise of this function difficult if not impossible. An extreme statement of this argument is that at

present the Commonwealth Bank has no control over credit, and is therefore unable to prevent an expansion of credit or to promote a contraction. The reasons given are as follow: Suppose that prices rise overseas and consequently the trading banks have a plentiful supply of London funds, and that the banks decide to adopt a policy of credit expansion. In these circumstances, their present cash ratios would admit of considerable expansion provided that the banks could discover profitable avenues of investment. Then deposits and advances would grow and prices tend to rise. All the elements of an incipient boom would be present, and, in the absence of central bank action, it is possible that the expansion would continue until the boom collapsed. The trading banks might rediscount their holdings of Treasury bills, or allow them to run off at maturity, and so secure ample cash resources for an expansion of credit.

Now, if the Governments wished to maintain the volume of Treasury bills, either the rate of discount would have to be raised, to induce the trading banks to continue to hold the bills, or the Commonwealth Bank must increase its holdings. So long as it was burdened with the obligation of rediscounting Treasury bills at a *fixed* rate, the latter alternative appears to be the more likely one, and the Commonwealth Bank might find it difficult to check the boom in its early stages.

But the Commonwealth Bank may now vary its rate of rediscount, and could easily raise it to a level which would make it unprofitable for the banks to rediscount bills. At the same time the Commonwealth Bank could begin to sell securities. This would at once tend to reduce the cash reserves of the trading banks and to raise interest rates generally. In Australia the market

for Government securities is on so small a scale that a relatively small sale, e.g. £250,000, is sufficient to reduce the price of securities and to raise their yield. If the Commonwealth Bank acted soon enough, in the early stages of the boom, the prices of industrial shares would also tend to decline, and the optimism of the business world would be damped. Meanwhile, if the trading banks wished to replenish their cash by rediscounting Treasury bills, the Commonwealth Bank, by raising its rediscount rate, could discourage them. The chief difficulties in the way of selling securities would be the brokerage charges (borne by the seller), which are high, and possibly the Bank's lack of experience in credit control.

It is difficult to ascertain to what extent the Commonwealth Bank has indulged in "open market operations". If the Bank has not developed a practised technique for buying and selling securities in this way it is possible that attempts to curtail a boom by selling Government securities might provoke a reaction which would precipitate a crisis. But lack of experience is a difficulty in *any* form of credit control.

These considerations of central bank policy affect the general question whether Treasury bills should be funded, and if so in what volume? Funding is the substitution of a long term security for a short dated one. Funding has been advocated on the grounds that the volume of outstanding Treasury bills is so great as to be dangerous to the credit structure and to its control by the Commonwealth Bank. This, for reasons given above, we doubt. But the question of funding may also be approached from the angle of public finance. If Treasury bills are left at their present volume the rate of interest on them, which is now below that of long term securities, will rise as times

improve, since banks will be offered more profitable investments and will only be induced to hold Treasury bills if they are available at higher interest rates. In these circumstances, when the time comes to fund it will be an expensive process for the Government because the rate on long term securities will also probably have increased. This consideration is independent of the problem of credit control. Another argument used by those who support funding is that Treasury bill finance is an emergency device, and will work best when its use is reduced after the emergency is past. Those who oppose funding consider that Treasury bills have come to stay as a feature of the Australian money market and that the present volume is not too large for the purpose of providing a useful interest-bearing liquid security for investors. Indeed many urge that no money marked can be developed without Treasury bills, and that so far from being confined to banks, they should be tendered for as in Britain and available to any investor. Again opponents of funding point to the immediate loss to Governments which would arise from replacing a security at a very low rate of interest by a security carrying a higher rate. They fear, too, that if funding is carried to any great length it will strengthen the deflationary elements in monetary policy and reverse the expansion which helped to produce such recovery as has been enjoyed.

The question turns upon the stage reached in the process of recovery. If boom conditions are developing which are likely to lead to a subsequent reaction and depression, funding may fulfil a useful function in helping to damp down the boom. It is true that, at such a time, rates of interest will be higher than at an earlier stage in recovery, but it does not follow that funding will impose a heavier burden upon the

public finances. A boom in business usually brings a boom in revenue, and a heavier interest charge can then be more easily borne. But premature funding, if it drove business back into depression, would reduce public revenue and even with low interest rates the budgetary burden might well be heavier than if funding were undertaken later.

We have assumed, in discussing the question of funding, that the Commonwealth Bank does not vary its holdings of long term securities. It should be remembered, however, that central bank loans, in the aggregate, are significant, and if the Commonwealth Bank replaces its Treasury bills by other securities, there is no deflation involved. And it is conceivable that, by increasing its holdings of securities still further, the Bank might offset any depressive tendency evoked when trading banks are deprived of Treasury bills as a liquid form of assets. In short, if it were desired, for convenience in public finance, to fund Treasury bills, the Commonwealth Bank *could* take steps to prevent this from exercising any deflationary influence. Whether it *would* do so, depends upon the policy of the Bank Board.

During 1934 the Commonwealth Bank kept the total of central bank loans fairly constant. Some observers suggest that recovery would come more quickly if the bank announced and facilitated a policy of monetary expansion. There are two distinct issues here: (*a*) whether or not monetary expansion would facilitate further recovery, without producing a reaction; and (*b*) whether such a policy requires action by the Commonwealth Bank.

Let us consider the latter problem first. We have already seen (Chapter VII) that an increase in investment, such as is involved in public works, can be

financed within limits by the transfer of fixed deposits into current accounts, and that an "inflationary" movement does not necessarily require an increase in the quantity of cash or of central bank credit. There is much to be said, therefore, for the view that there is no need for additional Treasury bills to finance additional public works. But there is need for action to prevent interest rates from rising, if a policy of expansion of investment is to be successful. The Governments need to be able to borrow without fear of a sharp fall in the prices of securities, and the trading banks need to be able to increase their advances, at low rates of interest, without fear of action by the Commonwealth Bank to reduce the cash holdings of the trading banks. Rightly or wrongly, the opinion is widespread that the Commonwealth Bank is opposed to a rapid expansion of bank credit and of public works expenditure, on the grounds that this might lead to a new depression. So long as this opinion is current, it is idle to say that the trading banks already have adequate resources to finance the expansion of credit required by recovery; the question is: Dare they use these resources? If it be desired to extend public works and to encourage private investment and the growth of bank advances, it may not be necessary that central bank loans be increased, but it is essential that they be not decreased, and that the fear of this be removed.

These considerations refer to the mechanism of credit expansion. We now turn to the prior issue, whether it would hasten recovery, and not produce a subsequent slump. And this brings us back to the difficult problems discussed, from a theoretical viewpoint, in Chapter VII. There we saw that *continued* expansion of ordinary bank credit will sooner or later

produce a reaction, and that to avoid this the expansion should be checked as fairly full employment is approached. But we recognize that it is, in practice, difficult to determine the critical moment when monetary expansion must cease if a decline in employment is to be avoided. In our opinion, this point had not yet been reached at the end of 1934, but as we do not know at what date the reader will arrive at this page, we cannot speak of the situation in the present tense. But early in 1935 we considered it to be true that an expansion of expenditure on public works could still safely be applied to hasten recovery.

§ 5. *The future of the Australian exchange rate.*

Since December, 1931, the Australian £ has been kept equal to approximately £⅘ sterling. This has involved variations in the exchange rate between Australian currency and gold currencies, for sterling, despite the operations of the British Exchange Equalization Fund, has fluctuated somewhat in terms of gold. And it has also involved variations in the exchange rate on countries off the gold standard, such as Japan, whose exchanges have not been pegged at a definite ratio to sterling. While by the term "exchange rate" most Australians mean the rate on London, it must be remembered that there are as many Australian exchange rates as there are countries with which we have any commercial or financial dealings. Before the depression, when practically all such transactions were made through London, the banks quoted rates only on London and New Zealand, but since 1932 the practice of dealing directly with various countries has developed, and the principal banks now quote rates on almost any foreign currency, and these rates are liable to vary from day to day. The following table shows

the rates, at various dates, on certain countries, and illustrates the instability of the exchanges over the last few years. It is noteworthy, however, that the value in gold currencies of sterling and therefore of the Australian £ had become comparatively steady in the latter part of 1934.

In the future Australia's policy must be affected by the course of events abroad. Until Great Britain returns to the gold standard, its re-establishment by Australia is not likely to be seriously considered. In any case the gold standard might be re-established as before, with a standard gold pound containing 113

TABLE 13.

Exchange Rates on Foreign Countries.

(Bank of New South Wales quotations.)

Average for Week Ending—	New York. Dollars to £A1.	France. Francs to £A1.	Japan. Australian Pence to 1 Yen.
1932—			
Oct. 27	2·657	67·01	22·302
Dec. 29	2·644	67·14	19·906
1933—			
March 30	2·717	68·50	19·562
June 29	3·365	67·96	19·656
Sept. 28	3·767	62·53	18·208
Dec. 28	4·038	66·23	18·375
1934—			
March 29	4·036	61·34	17·989
June 28	3·994	60·43	18·104
Sept. 27	3·952	59·23	18·213
Dec. 27	3·919	59·32	17·789
1935—			
Feb. 28	3·866	58·4	17·813

grains of fine gold, or the gold content of the pound might be reduced, according to the value of the pound

in terms of currencies already on gold. The latter procedure is known as devaluation, and was the path chosen by France, Italy, and other countries after the post-war inflations, and by the United States as recently as January, 1934. If Great Britain devalued at the rate ruling, for instance, in December, 1934, the new sterling sovereign would contain about 60 grains of fine gold. And if Australia followed suit, maintaining the existing rate on sterling, the new Australian £ would contain about 48 grains of fine gold.

Such an action would have certain advantages. The gold standard, so long as it is kept effective by freedom to deal in and to export gold, and by appropriate action by the central bank to check large gold movements, does ensure stability of the exchanges between gold standard currencies; and stability of the exchanges would facilitate the recovery of world trade, in which Australia, as an exporter, is vitally interested. Moreover, devaluation, giving the Australian £ a different weight in gold from the English sovereign, would help to convince people that the Australian £ and the £ sterling are *not* one and the same thing, and that there is nothing sacrosanct about the old parity. There are two objections to devaluation at the present time, made from differing viewpoints. The first is the possibility that the time has not yet arrived when stability of exchange with gold currencies (or what comes to the same thing, action to check large gold movements) can be ensured without dangerous consequences to the economic situation within Australia, and, for that matter, within Great Britain. This problem will be considered below, for it is of wider significance than the question of the gold standard as such. The second objection is that devaluation would impair the nation's

credit. Whatever force there was in this latter point in 1924, when Great Britain was considering the return to gold, it would appear to be relatively unimportant to-day, after all the blows that have already, in the course of the depression, been rained upon the credit abroad of both Great Britain and Australia.

A return to the old gold parity, either for Great Britain or Australia, seems to be out of the question in the near future. For Australia this would involve a fall of about 50% in the prices of her exports, and a similar fall in the landed prices of imports competing with her own manufactures. This would thrust her back into conditions at least as bad as those of 1930. For Great Britain the consequences of a rapid return to the old gold parity would be less disastrous, but nevertheless sufficiently grave to deter her from such action. If Great Britain returns to gold in the next few years, it will only be by devaluation.

Another possibility would be to seek to restore the former parity between the Australian £ and sterling, and then to consider devaluation. In this case the two pounds would have an equal gold content, albeit a lower content than before the depression. This would involve, at the present rate of exchange, a reduction in Australia's export prices and in the landed prices of competing imports, of about 20%, which would effectively check her recovery and create a situation of great distress. The effects would not be as great as a return to the old gold parity, but they would far outweigh any possible benefit. If Australia returns to gold in the next few years it will be by devaluation relatively to sterling as well as to gold.

All this is based on the assumption that the existing depreciations of the Australian £ and of sterling are likely to continue for some time, and follows from our

earlier discussion of the advantages of exchange stability (see page 126-7). It is conceivable, however, that the exchange rate between sterling and gold may be further disturbed by the policy of other countries, and it is probable that until the future becomes less uncertain, Great Britain will not be in a hurry to return to gold. Moreover, a reluctance to devalue may also encourage postponement of definite action. Probably exchange stability will be chosen as the objective of British policy, for the time being, although a sudden change in world conditions might lead to further variations in exchange.

It would appear, therefore, to be better for Australia to be content with a sterling exchange standard, and to maintain the existing rate on London, until there is good reason to alter it. Good reason might arise from two sources, namely the relations between Great Britain and the rest of the world, and the relations between Australia and the rest of the world. For instance, if for some special reason sterling should become very unstable in terms of gold, it *might* be preferable to maintain a stable rate between the Australian £ and gold currencies, and to allow the rate on London to vary with the gold value of sterling. But this contingency does not appear to be likely in the immediate future. More important is the other possibility, that relations between Australia and the rest of the world might render it difficult to maintain a stable rate on sterling and on other currencies which are stable relatively to gold.

On the one hand, a renewal of regular overseas borrowing, or a rise in the prices of our exports in world markets might gradually restore London balances to a level sufficient to compensate for our diminished gold reserve. A reduction in the rate on

London might then be considered. Exporters might not suffer any loss in Australian currency, and local manufacturers might not feel unduly the effects of the heavier imports, since there would presumably be an increase in Australian demand as a whole, if "income" from overseas recovered. But it appears to be unlikely that Australia will be as ready or as able to borrow abroad as she was before the depression, for many Australians now believe that too much was borrowed in the years of prosperity. And it is not possible to predict a rise in export prices. On the other hand, export prices might even fall still lower—the figures for the second half of 1934 were particularly discouraging from this point of view—and this would make it increasingly difficult to maintain the present exchange rate on London. Moreover, the progress of recovery within Australia brings with it a growth of imports, for every person brought into employment, or receiving an increase in income, spends part of his additional money on imported goods. This places a further strain upon London balances, in the absence of higher values for exports. Consequently it is conceivable that conditions might arise in which it would be necessary to choose between checking internal recovery and raising the exchange rate on London.

The maintenance of a fixed exchange rate on London involves action by the Commonwealth Bank similar to that which central banks must adopt to protect a gold standard. With this end in view, any tendency for the rate on foreign centres to rise must be offset by credit contraction to reduce demand for imports and to reduce the costs of exporters. Incidentally, as we have seen (page 137) this involves a general depression. Although the depression may be mild and short-lived, if action is taken soon enough, such action is

not likely to commend itself to Australia while there are still many thousands unemployed. The alternative, a higher exchange rate on London would naturally be preferred. The latter is not to be undertaken lightly, however, since it is liable to provoke retaliation by tariffs, quotas, and the like, on the part of our overseas competitors.

Our conclusion, therefore, is that the immediate goal of the Commonwealth Bank should be to maintain the existing rate on London, but that any considerable change in external relationships should be allowed to lead to a rise or fall in the rate, as circumstances may indicate, rather than to a reversal of the tendencies making for internal recovery. Once full employment is approached, exchange stability could probably be maintained with less danger to the situation within Australia. A more remote goal, we think, should be a return to the gold standard, with whatever degree of devaluation may be called for by the existing gold value of the Australian £. But in this matter we might well await action by Great Britain, and avoid the precipitate adoption of a gold content which might render the maintenance of the gold standard too difficult.

§ 6. *Socialization or public control of banking.*

In our discussion of policy we have assumed the continuance of the present banking system. Changes in its structure are, of course, to be expected. Further amalgamations of trading banks or of savings banks may lead to greater concentration of control, and the Commonwealth Bank may develop greater authority as it gains more experience in credit control. But we have not considered the possibility of radical changes by legislation, such, for instance, as would be involved in the socialization of banking. Since this is likely

to be a political issue in Australia as in other countries in the next few years, some observations are in place here.

Those who advocate socialization of banking may be divided into two groups, according to whether they propose that the State should take over all banking operations and forbid private enterprise in this field, or merely that the Commonwealth Bank (or the corresponding central bank in other countries) should be placed more directly under the control of the Government of the day. For those who understand the general operation of the present system, as described in this book, the choice between these two types of socialization will depend upon whether they desire the Government merely to control the volume of money including bank credit as well as cash, or also to direct the distribution of credit and to collect any profits associated with the ordinary business of banking. For although in some circumstances a central bank might find it difficult to increase the volume of credit if the trading banks were determined to counteract this policy, experience does not suggest that such a situation is likely to arise. Generally a central bank can increase the volume of trading bank deposits, or, in a depression, at least check their fall. It is quite possible, therefore, for the keenest of individualists to be dissatisfied with the credit policy of the central bank, without desiring to limit the private enterprise of the trading banks, and the two proposals should be studied separately, however much they may be confused in political argument.

Let us consider first the proposal to place the Commonwealth Bank under more direct political control. This might be arranged by placing the general policy of the Bank in the hands of a Minister, or by

allowing each Government to appoint or remove the members of the Bank Board. In 1924 it was prescribed that the members of the Board should retire in rotation, and could not be removed merely because the Government of the day might disapprove of their policy; consequently the Board has been, in practice, independent of changes in Government. Only if circumstances conspired to remove prematurely the majority of the Board, by death or resignation, for instance, would it be possible for a Government, under the 1924 Act, to nominate sufficient members to render the Board subservient to the opinion of the Government. The proposal to bring the Bank under political control has come from parties who were in favour of a large credit inflation; but if an unhappy accident did lead to the reconstitution of the Board by a Government intent upon inflation, a subsequent Government, wedded to "sound finance", might also favour an amendment of the Bank Act to enable it to enforce its policy of deflation.

The desirability, in general, of placing the Commonwealth Bank under political control is a problem of politics and public administration, and not of economics. A politically-controlled Bank would pursue an inflationary policy if the Government of the day wanted inflation, and a deflationary policy if the Government of the day wanted deflation. The economist can examine the effects of both policies, as we have done in this book, but the political issue, as to whether a Government should be entirely free to choose the country's monetary policy, is not properly within the economist's province. We need only state what appear to us to be the fundamental issues involved. On the one hand, it is urged, a Government elected by popular vote should not be

prevented from inflating or deflating if it thinks fit, by the refusal of a Board nominated chiefly by previous Governments which no longer enjoy the confidence of the majority of the electorate. On the other hand, it is urged, sectional interests are so vitally affected by monetary policy that the latter, if under Government control, would be determined by the pressure of sectional groups rather than by the general interest of the whole community. The acceptance of the first proposition involves logically the acceptance of political control of the Commonwealth Bank; while the acceptance of the second involves a refusal to interfere, even when the Government believes that the Bank's policy is not the policy best suited to the general interest. One is inclined to suspect that in the unlikely event of the whole of the present Bank Board being converted to an inflationary frame of mind, or adopting publicly the so-called "Douglas credit proposals", many people would change camps, former advocates of the Board's independence now demanding political control, and former advocates of political control insisting that the Board be not interfered with. Political principles sometimes wilt before practical policies.

On the subject of general policy, we have already written at some length, and what we have written would apply equally to the policy of a Minister in charge of the Commonwealth Bank or to the independent Bank Board.

Let us now turn to the other proposal, that Government banking should replace trading banks. This might be accomplished in various ways; the present owners of trading banks might be expropriated, bought out, or gradually starved out by the determined competition of a Government bank. In any case the latter would

then have to perform all the ordinary functions of the trading banks, accepting deposits and extending loans to business men and other borrowers. Employees and managers would have to be paid, although the cost of administration might conceivably be reduced by the abolition of competition between banks. A rate of interest would still be charged to borrowers, to ensure that loans would go to those industries and enterprises which could best use the capital invested. And it would still be necessary to choose between borrowers and to examine their securities before granting loans. It is doubtful whether a Government bank would do all this any better than private trading banks; and unless it took over the experienced staff of the latter, it might do this work less efficiently. An expansion of central bank credit would lead to a growth of the Government bank's deposits just as it does to a growth of the trading banks' deposits under the present system; the Government bank, like the trading banks, would be chiefly engaged in *distributing* the available funds.

Why, therefore, nationalize the business of banking, rather than some other business, such as bread-baking? There are several equally profitable types of enterprise, so the profits of banking cannot be the object of nationalization, unless there is some special reason for the State to take these profits. For many people there is a mystery associated with banking, and they suspect that banks make profits out of nothing—by some sort of black magic. But a bank's profits are simply the excess of its earnings of interest and commission over the interest it pays on deposits, and the costs of administration. Much attention is paid to the difference between the rates at which the banks borrow and lend, but the significance of this for profits depends upon the total deposits at various rates. With constant

deposits and advances, a transfer of deposits from current account to fixed deposits bearing interest means that profits will fall unless the margin between deposit rates and lending rates be increased. With a fixed proportion of current accounts to total deposits, and a constant margin between deposit rates and lending rates, an increase in deposits and advances means greater profits. Lastly a change in the composition of interest-bearing deposits (the rate is higher for longer periods) or in the composition of loans (the interest yield on securities is usually less than on advances to business men) may affect the aggregate profits even though the margin between average deposit and average lending rates is constant.

The last type of change is probably the least important of the three; but all operate to raise the banks' profits in a period of prosperity or of inflation, and to reduce them in a period of depression or deflation. Prosperity generally leads to a transfer of funds from fixed deposits to current account, thereby reducing the banks' outlay of interest, and also to a change in favour of fixed deposits for shorter periods, which acts in the same way. Moreover, prosperity usually means that many business men are prepared to borrow, and bank loans earn more than if they were lent by purchasing Government Bonds. There is special reason to expect therefore, that bank profits will vary with the general business situation, but this provides no special case for appropriating the prosperity profits, since many other enterprises enjoy greater profits in prosperity, for one reason or another. At first glance the situation appears to be somewhat different when the central bank is expanding credit. During a period of inflation, or of addition to the gold stocks, the banks are able to expand both advances and deposits; a con-

stant margin between the two rates of interest gives greater aggregate profits. But again a parallel can be drawn with other types of business which profit from monetary inflation. And one should at least notice the contention that where there are several banks, competition should prevent profits from rising unduly. There is, of course, some division of opinion regarding the extent to which combination has diminished competition. It remains a matter for individual judgment, in the end, whether bank profits are any less justifiable, from a social-ethical viewpoint, than profits of other industries which are dependent largely upon the general state of business or the movement of prices. In any case such profits could be taken by taxation, if desired, and this might appropriate them as effectively as would the nationalization of banking.

But there is another form of attack upon trading banks, namely, a criticism of the *direction* in which they lend, and of their insistence upon securities of a conventional type. It is suggested that credit should be made available to socially desirable developments rather than to those which can show a monetary profit; to clear slums rather than extend the stands at a racecourse. This, again, is an ethical question, and the economist has no special qualifications for deciding it. It is clear that nationalization of banking might lead to discrimination between borrowers on various grounds, for example, to starve industrial monopolies of credit, or even to foster the growth of nationalized industries. And indeed, if a political party wished to transform society into a socialist state by the gradual nationalization of important industries, it would be wise, for obvious reasons, to start with banking. Whether or not one supports the socialization of bank-

ing from this point of view depends upon one's general political position, and monetary theory provides no guide in this matter.

It will be seen, therefore, that the socialization of banking involves wider issues than those which form the subject of this book, issues indeed, which can with difficulty be argued dispassionately, and are seldom settled by theoretical reasoning. But an acquaintance with monetary theory should render even the wider issues *clearer* in the minds of all who have to adopt a definite position in politics.

FURTHER READING

CHAPTER I

Two good elementary books are Lehfeldt: *Money*, and Cannan: *Modern Currency*. Much of the historical material in this and in some later chapters is drawn from Feavearyear: *The Pound Sterling*, of which, at this stage, Chs I to V may be read with profit. Dunbar: *Theory and History of Banking*, although first written at the end of the nineteenth century, is still the best elementary discussion of banking, but the descriptive material is in parts out of date. Although difficult in parts, Cole (Ed.): *What Everybody Wants to Know About Money* can be strongly recommended.

CHAPTER II

For more detail on the items of a bank balance-sheet see Teare: *Australian Banking Currency and Exchange*. On the expansion of bank credit, Robertson: *Money* is good but difficult; see also Crick: "The Genesis of Bank Deposits" in *Economica*, June, 1927; Hayek: *Monetary Theory and the Trade Cycle*, pp. 152-76, and Hawtrey: *Currency and Credit*, Ch. XIII. A simpler analysis is found in Davenport: *Economics of Enterprise*, pp. 250 ff. "Forced saving" is explained by Robertson *op. cit.* and Walker: "Saving and Investment in Monetary Theory" in the *Economic Record*, Dec., 1933.

CHAPTER III

Price index-numbers are discussed in most books on economic statistics, e.g. Mills: *Statistical Methods*, Ch. VI, and Day: *Statistical Analysis*, Chs XXI-XXIII. The student should also examine the material on price levels in the *Commonwealth Year Book* and the *New South Wales Year Book*. Somewhat technical discussions of the problem of measuring changes in price levels will be found in Roll: *Money* and Keynes: *A Treatise on Money*, vol. i, Chs IV-VIII On foreign exchange the best book is Miller: *The Foreign Exchange Market*.

CHAPTER IV

For the theories here summarized see Fisher: *Purchasing Power of Money*; Keynes: *A Tract on Monetary Reform*; Cannan: *Money* and Keynes: *Treatise on Money*, vol. i, Bk III. A new work by Keynes, entitled *The General Theory of Money and Employment* has been announced, and an English translation of Wicksell: *Lectures on Political Economy*, vol. ii, is promised for the near future. Hawtrey: *Currency and Credit* and von Mises: *Theory of Money and Credit* (recently translated from the German) are standard works.

CHAPTER V

Many of the books recommended for other topics deal also with foreign exchange. In particular Miller: *The Foreign Exchange Market*, Keynes: *Tract on Monetary Reform*, Cassel: *Money and Foreign Exchanges After 1914*, and Whale: *International Trade* should be useful.

CHAPTER VI

The best practical description of the way in which the gold standard works is to be found in Miller: *The Foreign Exchange Market*. Good general accounts are Hawtrey: *The Gold Standard in Theory and Practice*, Gregory: *The Gold Standard and its Future*, and the *Report* of the Committee on Finance and Industry (Cmd. 3897, 1931). For the history of the English gold standard one cannot do better than read Feavearyear: *The Pound Sterling*, supplemented by Hawtrey: *Currency and Credit*, Chs XIX-XXI. The controversies may be followed in Gregory: *British Banking Statutes and Reports*, 1832-1929 (this includes the Cunliffe Report), and the Bullion Report is reprinted with an introduction by Cannan under the title *The Paper Pound, 1797-1821*. For the theory of the value of gold see Cannan: *Money*.

CHAPTER VII

The literature on this subject is not of an elementary type, and much of it is positively obscure. Sir Basil Blackett's *Planned Money* and J. R. Bellerby's *Monetary Instability* are among the simple but sensible accounts of proposals to stabilize business by monetary policy. J. M. Clark's *Strategic Factors in Business Cycles* helps to place monetary policy in proper perspective. After reading our next chapter, the reader may turn to D. H. Robertson's *Money*, especially the last chapter. E. F. M. Durbin's *Purchasing Power and Trade Depression* deals with the views of Douglas, Keynes and Hayek in readable fashion, and Lionel Robbins's *The Great Depression* applies Hayek's theory to the world slump. On the statistical study of business cycles see Mitchell: *Business Cycles. The Problem and its Setting.*

CHAPTER VIII

A survey of the monetary problems of many countries during and since the war will be found in Jack: *The Restoration of Modern Currencies*. Keynes: *Tract on Monetary Reform* gives an account of the British problem before the return to gold. Schacht: *The Stabilization of the Mark*; Dulles: *The French Franc*, and de Bordes: *The Austrian Crown* provide detailed accounts of the difficulties of particular countries. The best account of the German inflation is Bresciani-Turroni: *Le Vicende del Marco Tedesco*, and the only comprehensive study of modern Italian monetary problems is del Vecchio: *Cronachi della Lira*. On Russia the most useful book is Elster: *Vom Rubel zum Tscherwonjez*. On the more recent period see Benham: *British Monetary Policy*; Fraser: *Great Britain and the Gold Standard*; Cassel: *The Crisis in the World's Monetary System*; Dulles: *The Dollar Sterling Franc Tangle*; Gifford: *Devaluation of the Pound* and Hall: *The Exchange Equalization Fund*. The Reports and Documents of the League of Nations Gold Delegation are a mine of information on the production of gold and distribution of gold stocks, and the annual World Economic Survey by the Economic Section of the League is invaluable. But these titles are only a small selection from the numerous books available.

CHAPTER IX AND CHAPTER X

There is no satisfactory history of the Australian monetary system. Copland: "Australian Banking System" in Willis and Holt, *Foreign Banking Systems*, Copland: *Currency and Credit Control* and Teare: *Australian Banking Currency and Exchange* may be consulted. On the significance of London balances see especially Tocker: "Australian and New Zealand Currency Standards" in *Economic Journal*, 1924. Davidson: *Central Banking* and Rouch: "What the Crisis did for the Central Bank" in *Economic Record Supplement*, March, 1935, are useful. On the period of the depression see Walker: *Australia in the World Depression* (1933) and Copland: *Australia in the World Crisis* (1934). Official reports and similar material are assembled in three books of documents, edited by Shann and Copland: *The Crisis in Australian Finance, 1929-31*, *The Battle of the Plans* and *The Australian Price-Structure, 1932*.

INDEX

INDEX

A + B theorem, 161
Arbitrage, 124
Australian notes, 232, 245; reduction of note issue, 251; statistics of note issue, 253-4
Australian notes board, 233, 240, 245
Austrian crown, 192

Balance of trade, and foreign exchange, 120
Bank Act of 1844, 148; suspension of, 150, 184
Bank advances, 21, 30
Bank amalgamations, 258
Bank assets, 29
Bank clearings, 20. *See* Clearing house.
Bank crisis in U.S.A., 216
Bank deposits, 5, 46, 269, 286; fixed, 47-8, 289; on current account, 47-8, 289; origin of, 20-1
Banking, branch, 229; development of, 12
"Banking school," 148
Bank liabilities, 32
Bank notes, 11; convertible, 11-12, 14; inconvertible, 12, 15; seasonal demand for, 40
Bank of England, 141
Bank overdrafts, 21, 30, 49
Bank rate, 137, 210
Bank of New South Wales, foundation of, 223
Bank run, 17, 212, 216
Banks: Central, 15, 16, 51-2; in Australia, 249, 269. Savings, 16; in Australia, 229. Trading, 18; in Australia, 231
Barter, 1, 6
Belga, devaluation of, 219
Belgian franc, devaluation of, 219
Bill of Exchange, 21; discounting of, 49
Bi-metallic standard, 129, 151-2
Borrowing, oversea, 100, 301
Bullion report, 142
Business cycles, 156; psychological theory of, 172

Cannan, E., 96, 198
Capital, fixed, 27; working, 27
Cash, defined, 5; public's demand for, 41
Cash reserve, 30, 270, 286
Cassel, G., 133-4
Cheques, 14, 19
Cleansing crisis, 176
Clearing house, 228
Coffee, 172
Coinage, Australian, 232
Coins, 8; standard, 9; token, 9
Commonwealth Bank, 240, 269; control of money supply by, 253, 274, 291; established, 233
Copland, D. B., 276
Credit, creation of, 28, 40; expansion of in U.S.A., 209; rationing of, 49
Creditanstalt bank, 211
Crisis of 1893, 228-9
Cunliffe Committee, 138, 188

Currency notes, 184
"Currency school," 148

Deficits, 278
Deflation, 176
Depression, of 1920, 188; of 1929, 263
Devaluation, of Belgian franc, 219; of dollar, 216; of pound, 299
Devisen, defined, 197
Dollar, devaluation of, 216
Dollar-sterling exchange, 107
Douglas, C. H., 155, 180, 278

Exchange, on cheques, 69-70
Exchange Equalization Fund, British, 215
Exchange mobilization scheme, Australian, 271
Exchange rate on London, 72-3, 242, 266, 268, 297; control by Commonwealth Bank, 273

Fanno, M., 177
Feavearyear, A. E., 141 n.
Fiduciary issue, 196-7
Fisher, Irving, 93, 155
Flight from currency, 108, 212
Foreign exchange, 69; balance of trade and favourable rate of, 111-12; forward exchange, 125; instability of, 74, 78; outside market in, 266, 271; price level and, 99-100; rationing of, 266; stability of, 126-7; unfavourable rate of, 111-12
Forward exchange, 125
French franc, 205; depreciation of, 193
Full employment, 170, 173

Genoa Conference, 194
German "Scrip," 220
Giblin, L. F., 276
Gibson, Sir Robert, 267
Gold, 8-9; discovery of in Australia, 224; drain of in 1931, 212; Movements of in Australia, 226-7, 267, 271; price of, 214, 274; production of, 133, 274; sterilization of, 201; stocks, 133, 202; stocks in U.S.A., 200
Gold block, 219
Gold mining shares, 214
Gold parity, 130, 130 n.
Gold points, 130-1
Gold reserve, 197; Australian, 136, 275
Gold standard, 128; abandonment of, 184, 210, 212-13, 272; abandonment of in Australia, 235, 267; adoption of, 152; mechanism of in Australia, 257-8; return to, 195, 300; "rules" of, 140, 202, 209, 268
Gregory, T. E. G., 138 n.
Gresham's law, 13

Hawtrey, R. G., 155
Hayek, F. von, 155, 174, 180
Hoover Moratorium, 212, 273

Inflation; in Australia, 234; in U.S.A., 216; post-war, 188; war-time, 87, 183, 234
Interest, market rate of, 90-1, 166; natural rate of, 90-1, 166
Interest arbitrage, 201
Interest rate, credit control and, 49, 88; investment and, 89; reduction of, 289
Investment, 167, 168; savings and, 83

Japanese yen, 215, 219

Keynes, J. M., 83-5, 95-6, 98, 101
Kitchin, J., 133-4

Lending, oversea, 100, 109-10, 113, 208
Liquid funds, 108, 201

London balances, 243, 265, 274, 288

Macmillan Committee, 129
Mark, 220; depreciation of, 189; Rentenmark, 191
Marshall, A., 95
May Committee, 212
Mill, J. S., 92-3, 96
Miller, H. F. R., 125, 131
Mint, 10; Australian, 225-6
Mint parity, 71, 130 n.
Mitchell, W. C., 156 n.
Money, defined, 4; demand for, 92; external purchasing power of, 117; functions of, 5; internal purchasing power of, 117; purchasing power of, 55-6

New York stock exchange panic, 210-1

Open market policy, 277, 292-3

Palmer, H., 147
Peel, Sir Robert, 149
Premiers' Plan, 273, 278, 289
Price index-numbers, 59; export, 68; retail, 68; wholesale, 68
Price levels, 54; causes of changes in, 78; of consumers' goods, 78; of exports, 105; of imports, 105; of producers' goods, 103-5; instability of, 74; retail, 103; stability of, 126; wholesale, 103
Public works, 181, 295-6
Purchasing power parity theory, 115

Quantity theory, 91

Ratio of advances to deposits, 246
Reparations, 111, 114, 208
Reserve ratio, 31, 33, 175, 246
Robertson, D. H., 128

Savings, bank deposits and, 42; forced, 44; investment and, 83
Silver, 8, 9, 12, 13
Silver standard, 128
Socialization of banks, 303
"Sound finance," 180
Spanish dollar, 223
Speculation, 110, 114, 208
Stabilization, 178; of prices, 178; of wages, 179
Sterling, 107
Sterling block, 219
Sterling-dollar exchange, 107
Sterling standard, 275

Tariffs, price levels and, 99-100
Technical progress, 163
Theodore, E. G., 277
Tocker, A. H., 245
Tourist expenditure, 109
Treasury bills, 215, 279, 291; funding of, 293; statistics of, 282, 285
Treasury notes, 184
Triangular trade, 123-4

Usury, 145, 147

Velocity of circulation, 93-4

War debts, 111, 114
War loans, 235
Wicksell, K., 90, 91, 98, 166
Wilson, R., 245
Wood, G. L., 276
Wool, price of, 288
World Economic Conference, 216

Halstead Printing Company Limited,
Nickson Street, Sydney